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NEWS

The effort to create censorship on the Web was not laid to rest with the Supreme Court's CDA ruling. New legislation that aims to be "appeal-proof" is in the works. The Clinton administration has called on Web sites to rate themselves in order to head off government involvement, but so far, the Web is resisting. Can ratings prevent another showdown over censorship? Plus: As Web growth explodes, site promoters claim they know how to draw a crowd, for a price.19

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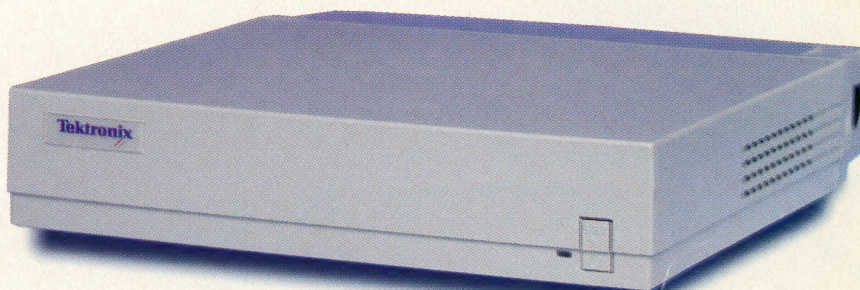
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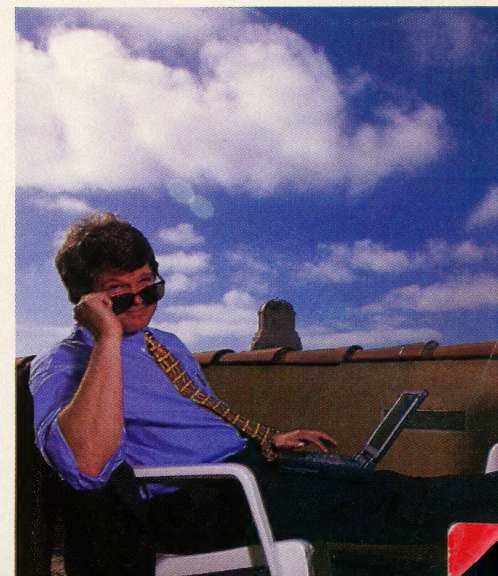
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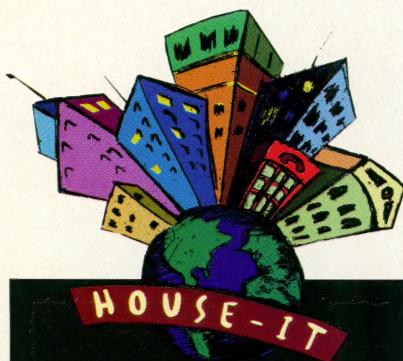
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Can Netscape and Microsoft Be Everywhere at the Same Time?

THE RULES OF PHYSICS ARE IMMUTABLE: TWO OBJECTS CAN'T occupy the same space at the same time. As the computing world girds itself for the arrival of Microsoft's latest operating system upgrade, Windows 98, Microsoft wouldn't

mind if Windows users came to feel that in order to benefit fully from the upgrade, their hard disks should be cleansed of any browsers emanating from Netscape's FTP site.

But hard disks are big places. Few of us are so strapped for spare megabytes that we can't run both browsers. Anyone who needs to stay on top of Web developments knows that you absolutely need to have both Explorer and Navigator running on your system. No matter which you prefer, there's always going to be some site that uses a feature requiring the other.

So as we set out to look at what Windows 98 offers for the Internet in this issue's cover story, I had one question that had nothing to do with new operating system features. I wanted to know whether there was anything about Microsoft's new integration between the desktop and the Internet that would leave Netscape Navigator behind.

It's great that Windows 98 will make it easy to turn a Web page into a desktop icon, so I can start doing things like putting a HotBot query box right next to my Eudora e-mail icon. But I'm a native New Yorker; I'm suspicious by nature. I feared the war between Microsoft and Netscape would turn ugly. But, as Kevin Reichard points out in this issue's cover story, my fears were unfounded. Nothing in Windows 98 interferes with Navigator; you can still enjoy Windows 98 desktop-to-Net integration using Navigator.

So while I'm relieved to see that Microsoft is playing fair, I'm equally encouraged to see that Netscape is also taking the threat of Windows 98 seriously. The company has embarked on a "Netscape Everywhere" campaign

designed to put Navigator on at least as many computers as will run Windows in coming months.

For Netscape, this is a mildly embarrassing about-face. After insisting for months it would sell Navigator 4.0 only in a bundle with other components like Messenger, Collabra Discussion Groups, and Composer, it gave in to "browser war" fever and is taking the gloves off.

Netscape's future is still tied to groupware, as its CEO Jim Barksdale argued in our July interview. But it can't succeed with groupware if it loses the browser war. Customer loyalty is won at the desktop, and Microsoft's control over Windows will stand in the way of Netscape's future. So the browser wars are still alive and Windows 98 represents the next battle.

Anyone who thinks this competition doesn't matter and that the press builds up these issues to sell magazines should be sure to look at the situation with e-mail. As IW Labs found in this issue's report, several new standards are in the process of being established for e-mail. HTML encoding of e-mail messages is a feature Netscape pioneered last year; already, 5 out of the 12 e-mail clients we reviewed can now display HTML pages in the body of a message.

Another important standard being set is S/MIME, a protocol for providing security to e-mail: It can verify your e-mail is reaching the intended party and it can encrypt the message while it travels. E-mail security is essential for the continued growth of the Internet. Right now, any hacker who wants to snoop on an e-mail server can do so with little effort. Encryption provides substantial protection. But encryption standards are needed. No one wants to change their e-mail software because a client uses a particular form of encryption. A market leader has to push the standards process along. Right now, the Internet Engineering Task Force is moving slowly, but Netscape and Microsoft are not. Both ship S/MIME-enabled e-mail clients today.

As long as the combatants continue to set open standards, it's a battle that users will win.



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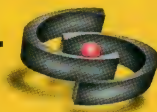
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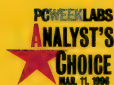
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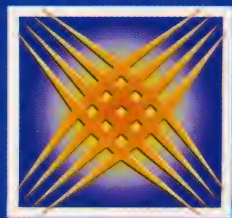
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Letters to the Editor

A BOYCOTT FOR JUNK E-MAILERS

I have to disagree with Glee Harrah Cady, who said in James Evans' news article ("Putting a Lid on Junk E-Mail," Sept. *IW*), "We don't want to stop marketers..." That's exactly what I'd like to do! However, we don't need government control or software to do it. All we have to do to stop junk e-mail is to prevent it from being profitable. If people boycott everything sold via Internet junk mail, it will cease to be lucrative.

K. ALLEN
kgallen@adnc.com

IGNORING JUNK MARKETERS

There seems to be a lot of discussion about "junk" e-mail. I think the real issue is not what gets sent to us, but how much work we must do to determine whether we want to read or delete it.

I think all advertisement type e-mail should show the word "advertisement" in the subject field. It allows me to easily categorize it for later review or to filter it out just as I do when I sort through the paper mail.

Receiving unsolicited advertisements is one of the prices we pay for living in a substantially open society. However, requiring a little no-cost consideration from the sender can go a long way to making it less of a burden.

ED ANDERSON SYOSSET
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FRAUD BEGINS AT HOME

I really enjoyed David Zgodzinski's article "Click Here To Pay" (Sept. *IW*). However, I found the article's review of SET overlooked a big security problem facing online stores today. My company has successfully sold goods and services on the Web using CyberCash for a year. We have discovered that a major source of credit card fraud does not come from our employees stealing card numbers, or from hackers who crack the encrypted messages we send to the bank. It comes from the children of card holders, who have used creative tactics on their parents to obtain the card information they need to perform an online transaction. Even though SET is a step in the right direction towards fraud protection, it does little to help the merchant identify a legitimate and authorized purchaser.

The third-party certificate scheme sounds great but does nothing for the merchant when the card holder calls to complain

about a fraudulent charge, made from his computer on his desk or in his house.

THOMAS KNUDSEN
thomas@atweb.com

CAN I PAY ANOTHER WAY?

In "Click Here to Pay," (Sept. *IW*) you describe six electronic transaction systems. All six are credit card verification systems. Unfortunately, I have no credit card because I refuse to support this institution that charges exorbitant usury.

PIERRE ABBAT
phma@trellis.net

IT ALL BEGAN WITH TELNET

Your article about global roaming ("Roam If You Want To," News, Aug. *IW*) gave the impression that dialing into one's account from anywhere was a hot new idea and a service people should be willing to pay for. In fact, global roaming has been around for a long time, only it's called telnet. You can log into your machine and check your mail from the command line during a telnet session from anywhere you like for no extra charge. All you need is access to an Internet-connected computer.

DAVID MINTZ
dmintz@panix.com

It's true if you had access to an Internet-connected computer you wouldn't need roaming. But many travelers don't have that luxury. Roaming allows users to dial a local phone number in order to use the Internet access account they are paying for without making a long-distance call. We're still a long way from the type of global Internet access that would allow anyone to telnet to their account from anywhere.

—Gus Venditto

TALKING ABOUT VIDEOCONFERENCING

As a salesman for videoconferencing equipment and services, I have received several calls lately asking about desktop-based videoconferencing systems, thanks to David Strom's article "Videoconferencing in Focus" (Sept. *IW*).

David has *most* of his facts correct, although I do not know of a single manufacturer that sells room-based systems starting at \$50,000. Most room-based systems start at \$14,000 and top out at \$50,000. New systems from PictureTel and Tanberg run under \$9,000.

Also, the article suggests that the systems can talk to one another, at least those from the same manufacturer. There was no mention of the needed gateway for talking from H.323 systems to H.320 systems, and nobody can talk to H.324 systems but other H.324 systems. Strom doesn't mention that the biggest drawback to H.323 and H.324 systems is the frame rate.

Most IP systems are lucky to deliver 10 frames per second; H.320 systems deliver 15 fps all the time.

TODD ALAN GREEN
tgreen@houston.flairdata.com

STRUGGLING FOR SPEED

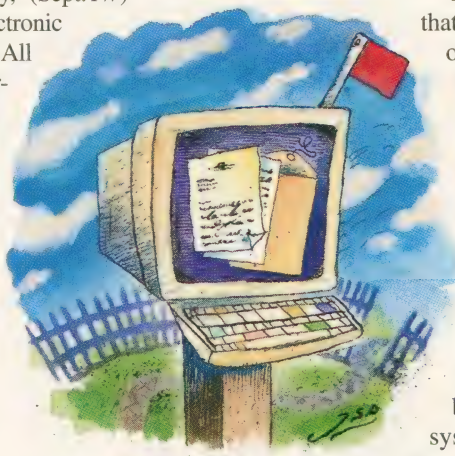
We bought a 56K modem made by Boca from our ISP, paid for installation, and have been trying to connect at anything higher than 28 Kbps for weeks. We tested our AOL connection and routinely connected at 33 Kbps without problems. We therefore don't believe the problem is in the phone line.

If I pay almost \$200 for a modem and installation, I expect it to work. Why would anyone spend money to upgrade if the higher speed is problematic?

W. K. SUTLEY
sutley@erols.com

NET PC? NOT ME!

Gus Venditto's vision of a Net PC (From the Editor, Sept. *IW*) future scares me to death. Even based on my current uses of my home PC—writing personal letters and financial record-keeping—I don't want that information on a distant server where confidentiality can never, ever be 100 percent guaranteed. Add possible future uses—online banking and consumer transactions—and I'm in full-blown paranoia. I'm not a conspiracy nut, but a future world where everyone's data



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"Simply put, Eudora Pro 3.0 is the best stand-alone email client around."
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"Eudora is the cream of the email crop."
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Windows Sources

"Eudora Pro is our pick... other [email] packages can't match Eudora Pro."
Home PC

"If you use email every day, check out Eudora Pro 3.0. It offers message filtering, supports most standards, and beats any browser's email client."
PC Computing - 4 Star Review

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Letters to the Editor

is on a central server sounds like an invitation to Big Brother (or worse) abuses.

TOM MCCOOL
lhhpub01@pop.nlc.com

A BETTER PICTURE WITH DTV?

In Russ Lockwood's piece on HDTV (News, Sept. *IW*), he writes about "the FCC's clearance order for high-definition television (HDTV)" and speculates about how great life will be for the Web surfers out there.

The FCC has mandated Digital Television (DTV) transmission, not high-definition (HDTV) as Lockwood would have us believe. These terms are not synonymous. DTV, as defined by the various standards comprising it, is just about as good as current NTSC analog TV in terms of resolution and makes no provisions for a wider aspect ratio than we currently have.

While the FCC's order allows for HDTV under channel sharing, it is in no way mandated.

A new DTV receiver is not necessarily going to offer a better picture than what we currently enjoy. We may be expected to pay

\$1,000 or more for the same 32-inch TV we can now purchase for less than \$500.

You can read the full text of the FCC's order at <http://www.fcc.gov>.

LARRY JANDRO
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THE MISSING PLATFORMS

Did Bill Gates and company purchase the Internet and I missed it? I was looking forward to reading about how to optimize my Netscape and Internet Explorer 4.0 versions in August's *Internet World*. Not once was any mention made of which tips would not work on any given platform—the entire article was slanted to the Windows 95 user. What about Mac OS, Solaris, and Unix users?

MARIA SHUGARS
mshugars@mystech.com

CORRECTIONS

The price of Mercantec's SoftCart 3.0, covered in October's *IW* Labs (p. 86), is \$1,500, not \$4,995 as stated in the review.

The Black List of Internet Advertisers ("Putting the Lid on Junk E-Mail" Sept. *IW*) can be found at <http://math-www.uni-paderborn.de/~axel/BL/blacklist.html> or <http://www-math.uni-paderborn.de/%7Eaxel/BL/blacklist.html>.

The telephone number for more information about Internet Checks from Infodial (New Releases, Aug. *IW*) is (800) 932-9311.

The prices quoted for world.hire's Recruiter (New Releases, July *IW*) are actually for world.hire's initial product, Online.

Three telephone numbers in the *IW* Labs features comparison chart for log-analysis software (June *IW*, p. 80) were inadvertently switched. Our correction in August did not fully correct this. The correct number for e.g. Software is (503) 294-7025, and the phone number for WebManage Technologies is (603) 594-9226.

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News

Edited by Amy Dunlop

ON AND
ABOUT
THE NET

REGULATION

After CDA, Ratings Gain Slowly

The Internet is facing a pivotal decision: self-regulate content or risk a new censorship threat from the government. The self-regulation movement gained steam after the CDA was defeated and proponents began plotting new legislative strategies. In response, the Clinton administration urged Web sites to rate themselves.

AOL, Disney, Microsoft, and Netscape are among the companies supporting the adoption of PICS (Platform for Internet Content Selection), which specifies how to label Web content. PICS labels embedded in HTML page headers are used to rate a site; the actual rating comes from one of two systems: RSACi (Recreational Software Advisory Council on the Internet) from a software trade group and SafeSurf from a group of educators. Both systems can block access to sites based on the level of sex, violence, and profane language. (Ratings are listed on p. 108.)

Microsoft's Explorer 3.0 and higher lets a parent set a password and choose categories to block, and Netscape says it will do the same for Navigator. This blocked-by-the-browser approach guarantees that eventually most people using the Web will have the means to block sites they feel are objectionable. It also means that a ratings-enabled browser will not "see" unrated sites.

A greater motivation comes from the search engines: Some ratings advocates hope search engines will soon let users

block unrated sites, so Webmasters will be forced to rate themselves or risk invisibility.

Some large sites aren't taking the chance. Playboy has used RSACi ratings for over a year. Eileen Kent, VP of New Media at Playboy Enterprises, says, "It's vital to have disclosure by the content people and not somebody else doing the ratings." To help set the tone, Playboy belongs to the Internet Content Coalition

voted to reject *any* ratings system. Scott Woelfel, VP and editor-in-chief of CNN Interactive, says, "There is no practical way to rate news sites. The only feasible alternative is to say no to ratings." Asked if this might open the door for other segments of the online industry to reject ratings, Woelfel says, "There are concerns as to how they will be affected by labels. I think the news argument is a unique one and doesn't follow for others."

Gerard Van der Leun, senior editor at Penthouse, sees several problems. "Changing HTML headers requires a lot of hand work. We have 15,000 to 20,000 pages at our site, so going through them one by one isn't trivial." However, it isn't the work but the uncertainty about future changes in standards that most bothers Van der Leun. "TV ratings are a nightmare," he says. "We don't want that same situation on the Internet." Thus, the Penthouse position is to wait and see. "The porosity of the medium—where almost anybody can be a publisher—leaves us waiting for a consensus [on ratings] to develop."

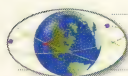
For now, Van der Leun is more concerned with market share than moral issues. "Right now there's a tremendous amount of competition, using every trick in the HTML book to attract attention," he notes. "It's springtime for Mom-and-Pop erotica sites. Ratings systems are like shoveling seaweed against the tide."

—Nelson King



(ICC), a group working on methods for Web sites to control how others use their content (see p. 30).

Not everyone is ready to be converted so easily. At a meeting of the ICC, representatives from news sites such as The New York Times and Reuters NewMedia



Satellites: Big plans combine with big bucks. **20**

Does your salary measure up? Check the stats. **23**



Newsmaker: The threat for Web content. **30**

BANDWIDTH

Satellites Will Soon Flex Their Internet Muscles

Communications satellites are quickly becoming an important means of accessing the Internet, and several companies with deep pockets are hoping to tap into the global demand for bandwidth.

The largest operator right now is Hughes Communications with its DirecPC, which delivers 200 Kbps to 400 Kbps access speeds—the only currently operational system. Hughes has big plans for more: Spaceway will employ an eight-satellite network with data-transfer speeds up to 6 Mbps and the company has filed with the FCC for Expressway, a \$4 billion system for delivering data at 1.5 Mbps and up.

Earth, so LEO networks deploy numerous satellites in orbital patterns to ensure global coverage at any given time.

One ambitious project is Teledesic Corp.'s "Internet-in-the-Sky," a network of 288 satellites to provide two-way broadband, voice, data, videoconferencing, and high-speed Internet access. Teledesic will begin selling its bandwidth in 2002 to service providers such as phone companies, which will link their own wired or wireless networks to the satellite network via ground-based gateways. In theory, Teledesic will deliver enough bandwidth to support millions of simultaneous users.

Hoping to dominate with multiple projects is Loral Space & Communications. With French telecom partner Alcatel, Loral is planning CyberStar, a three-satellite GEO network that will launch in 1999 and deliver Internet connectivity (at 2.5 Mbps upstream and 6.5 Mbps down), video on demand, real-time streaming, and other communications. In addition, Sky-

systems is untested, especially the satellite-to-satellite communications aspect."

The potential for return on investment is another looming question. "For the most part, the new-generation satellites won't be able to compete with terrestrial systems, like xDSL, but there is still a large niche market [for satellite access] in North America of suburban and rural markets. In the rest of the world, there is a bigger opportunity." Pultz thinks it's too early to tell which of the major systems on the drawing boards will succeed, but he'll measure the outlook based on their technological experience, production capability, financial backing, and international clout.

So far, the major players all appear to have what it takes. —David Zgodzinski

TRADEMARKS

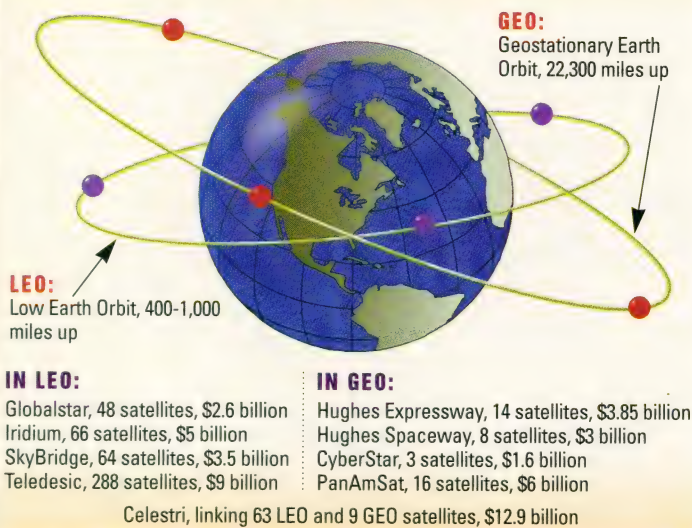
Microsoft Quietly Bought Web in '94

The term "web" is so ubiquitous that it's hard to believe any company could own a trademark on the word, but one does—Microsoft Corp. The software giant came to own the trademark in 1994 after purchasing Web Corp. of San Francisco, a computer networking company. Web Corp. snagged the mark in 1992.

Microsoft freely admits it owns rights to the word but refuses to divulge plans, if any, to protect its property. Greg Shaw, a Microsoft spokesman, says the company has no intention of asserting ownership against anyone who uses web "descriptively," yet he declined to comment about people employing the word as part of a business name.

"Web" was used in more than 1,000 trademark applications two years running and trademark lawyers aren't running scared. "It's not something people should worry about as a matter of substantive law," says Andrew Bridges of Wilson, Sonsini, Goodrich & Rosati in Palo Alto, Calif. "But people should worry about it as a potential hassle." —James Evans

CROWDED SKIES



All the Hughes satellite systems function in the Geostationary Earth Orbit (GEO), where the "birds" stay in a window about 22,300 miles above the equator. At that altitude, the satellites orbit in sync with the Earth's rotation and remain over the same spot. GEO satellites, which deliver a signal to a wide area from their lofty perch, have been generally best suited for TV broadcasting. Soon the possibilities of LEO (Low Earth Orbit) systems will be put to the test. The low orbit makes for quick response time and is better suited for real-time communication. Each satellite beams to a much smaller territory of the

Bridge is a 64-satellite LEO system planned by the partners for service beginning in 2001. Loral is also working with Qualcomm on Globalstar, a satellite system for telephony, data, and fax.

Motorola will get in on the action with Celestri, a system combining GEO satellites for broadcast and multicast functions and LEO satellites for interactive functions such as the Internet. Motorola also has a 21 percent stake in Iridium, which will serve cellular-phone customers.

Jay Pultz, research director for Wide Area Networking for the Gartner Group, says, "The technology for multisatellite

Small Office Solutions

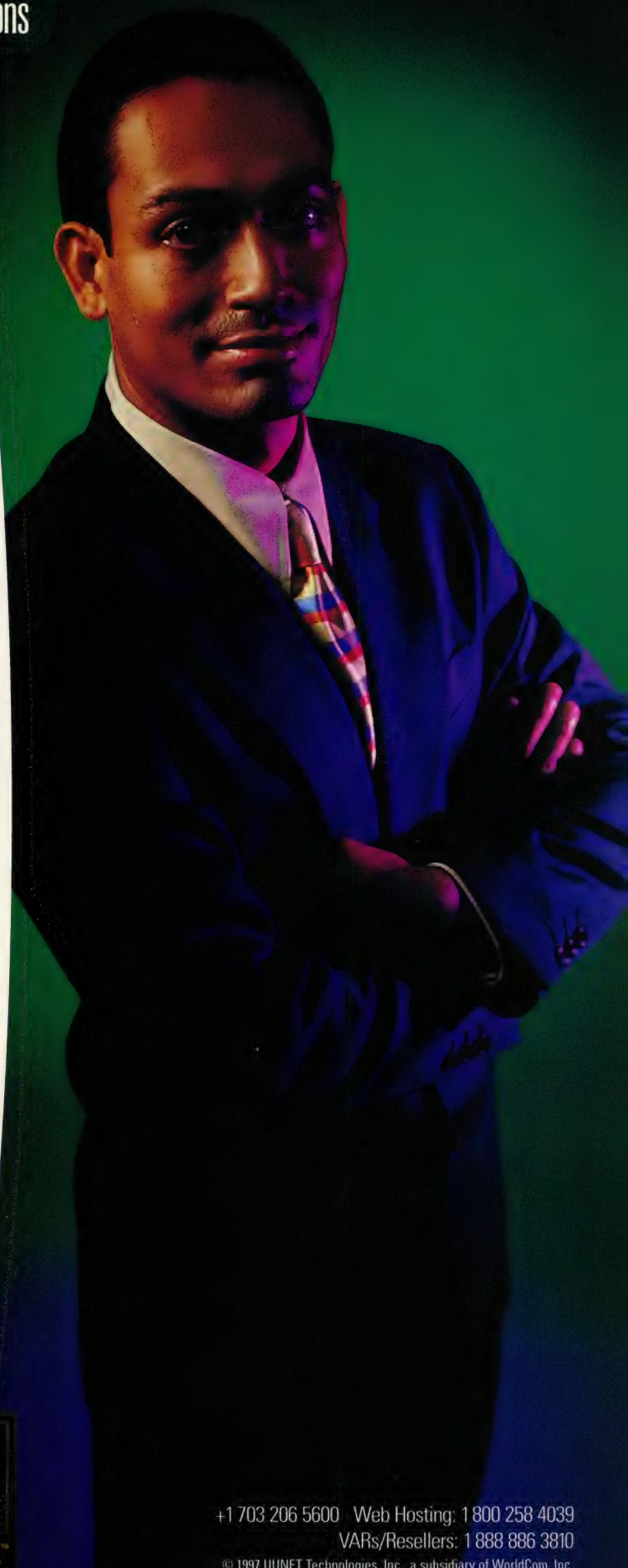


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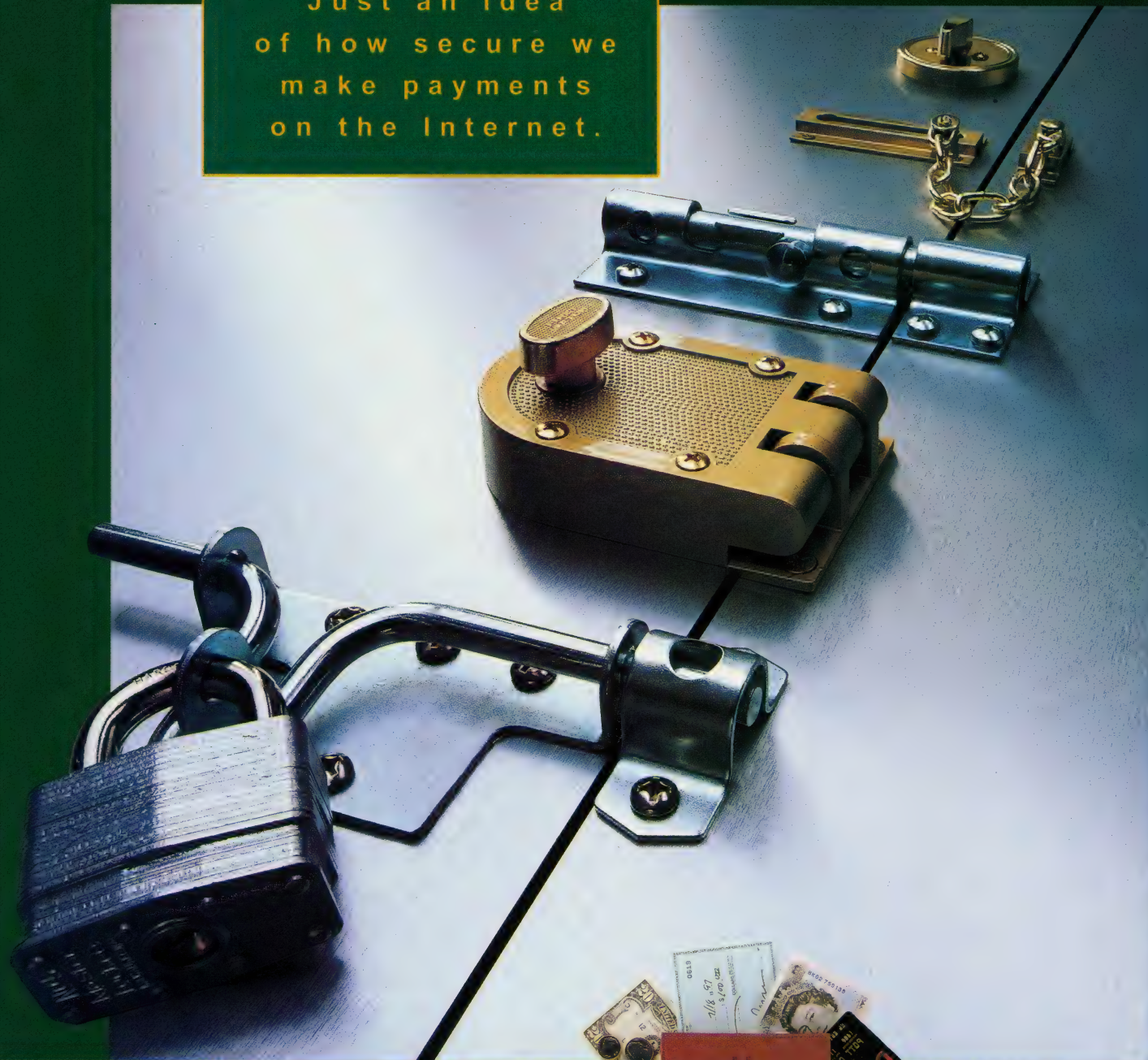
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M a k e I n t e r n e t C o m m e r c e P a y

DRIVING

Web Giving Traffic-Weary Drivers an Edge

Many state and regional agencies offer up-to-the-minute traffic information thanks to highway sensors, cameras, and trooper reports, but the challenge is to get it to drivers quickly. If you live in an urban area such as Atlanta, San Francisco, New York, and others, you'll be able to check the Web for the best routes before you leave your office, complete with accident reports, speed information, and live video.

Etak Inc. of Menlo Park, Calif., a unit of Sony Corp. of America, in partnership with Metro Networks Inc., the oldest and largest traffic-reporting service in the United States, plans to have nationwide real-time

traffic reports on the Web available to 50 metropolitan areas by 2000. Icons on digital maps will pinpoint problem areas.

San Diego, Calif.-based Maxwell Information Systems entered real-time traffic reporting when one of its employees endured a horrible commute thanks to inaccurate radio traffic information. Maxwell has been partnered with Yahoo for the past year to deliver a co-branded graphical traffic service for Yahoo directories for Los Angeles, San Francisco, and Chicago, with plans to expand to at least 10 other cities. (Regional Yahoos also offer Shadow Traffic, text-based reports of traffic incidents.)

Maxwell is also providing real-time traffic information (Traffic Station) via Internet Explorer 4.0's Traffic Guide push channel and is developing a similar service for Netscape Navigator's next release.

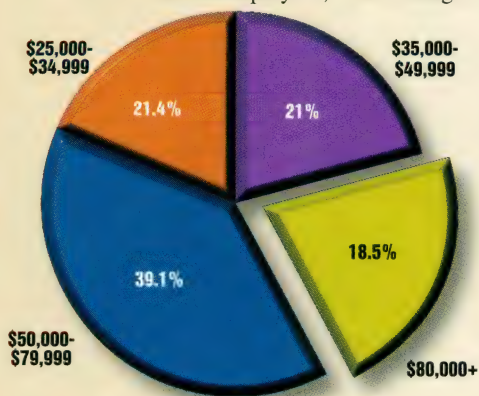
Both companies plan to offer additional services such as paging (already in pilot tests), cell-phone callbacks, and e-mail traffic alerts for \$5 to \$15 a month. Etak and Maxwell are relying on sponsors and ads to produce revenue from the Web sites. In addition, Etak is deploying its service for in-vehicle navigation devices, which use satellite transmissions of the data.

—Vira Mamchur Schwartz

VITAL SIGNS

WEB WORK PAYS OFF

Web managers pull in better salaries at big companies. On average, Web managers earn \$57,592 annually. At companies with 250 or fewer employees, Web managers



make an average of \$54,264, while those at companies with more than 5,000 employees do better at \$71,806. (Institute of Management and Administration)

THE CALL IS GOING THROUGH

Call-failure rates to national ISPs are decreasing. Over a 24-hour period in June, the failure rate to 13 ISPs was 8.1 percent, an improvement over 12.2 percent in March. AOL is doing much better in recent months, with call failures at 34.7

percent during evening hours; in January AOL's rate was 80 percent. On the e-mail front, e-mail messages make it to their final destinations within 5 minutes 91 percent of the time, even during peak hours. (Inverse Network Technology)

MID-YEAR ON THE NET: 21 MILLION

There were about 21 million users of U.S.-based Internet service providers at mid-year. The second quarter marked the lowest rate of growth in a decade, when household accounts increased by only 766,700 new customers. (Interactive Services Report)

TRAINING CHOICES ARE BEING MADE

Online-learning strategies or pilots are being developed by 82 percent of large corporations, but only 15 percent of those have made a choice of tools. More than 130 online-learning products have come to market since Jan. 1, 1997. (The Masie Center)

WEB-AD REVENUE EXPLODES

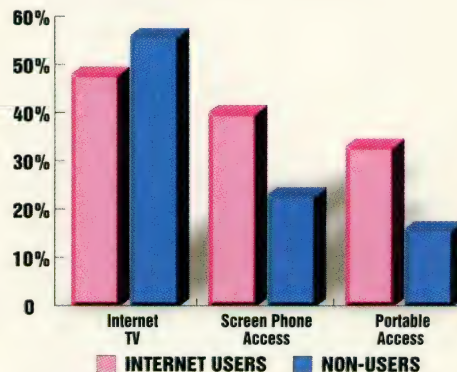
Web-advertising revenue grew to \$217.3 million through the first half of 1997, a 256.2 percent increase over the first half of 1996. Total Web-ad revenues for this year will be \$446 million, with search

engines garnering 45 percent of that, followed by technology publishers at 35 percent and consumer/news sites at 20 percent. (Cowles/Simba Information)

SHOPPERS GO ONLINE

In December 2001, 39 percent of Net users will buy goods and services on the Web, as compared to 25 percent in December of 1996. (IDC)

INTEREST IN WEB APPLIANCES



Over half of non-Internet users say they are interested in gaining access through their TVs. Interest in other appliances lags behind. (1997 American Internet User Survey, Find/SVP) —Amy Dunlop

MULTIMEDIA

Taking Sides on Video

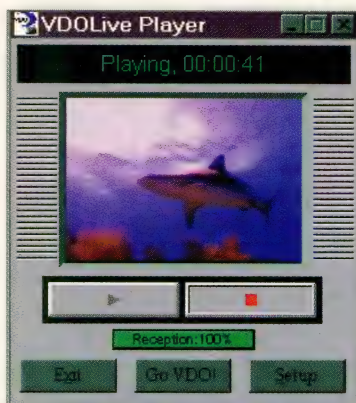
Consolidation has swept through the streaming video market and Microsoft seems to be left standing with the biggest pieces. Within days of shipping its newest videoconferencing application, NetShow 2.0, Microsoft acquired the start-up publisher of streaming video servers, VxTreme. Microsoft already held equity stakes in both of VxTreme's main rivals, VDOnet and Progressive Networks (maker of RealVideo), and it had won pledges of support from each company for NetShow.

Both Progressive and VDOnet are expected to remain independent and safely removed from Microsoft's main interest: corporate videoconferencing.

VDOnet is planning to focus on videomessaging by linking its streaming video server with network directories and call-center applications. The goal is to make it possible to send a video clip directly to someone's screen.

Progressive Networks seems more likely to concentrate on the consumer market for media players. The company is working with Microsoft to

develop Microsoft's Active Streaming Format (ASF), which it hopes will remain compatible with the RealVideo player. It also made inroads with a deal to use MCI's backbone to improve playback—a system to be called RealNetwork. ABC News and ESPN have already signed up.



Oracle is emerging as the champion of the loyal opposition for live-action video. It recently published the Video Encoding Standard (VES) API for streaming video within seconds of filming. The VES spec works with Oracle's own server but the company also lined up support from Compaq, Iterated Systems, Silicon Graphics, Starlight Networks, and Sun.

—Gus Venditto

Apple Commits to Explorer and MS Java

Microsoft's deal to invest \$150 million in nonvoting shares of Apple is likely to result in browser-share losses for Netscape and hurts Sun's efforts to control the future of Java. Under the agreement, Microsoft will ship Internet Explorer for Macs and Apple will bundle Explorer with the Mac OS, making it the default browser. The companies also plan to ensure interoperability between their Virtual Machines for Java, giving Microsoft much needed help in its effort to control Java development.

—A.D.

DEALMAKERS



Sun Microsystems acquired **Diba**, a maker of information appliances. The two will work on developing Java-enabled consumer electronics such as Internet-enabled TVs, set-top and satellite boxes, and smart phones • **Intel** and **SAP America** formed **Pandesic**, a new joint company that will develop end-to-end systems for selling goods and services over the Internet • **National Semiconductor** bought fellow chipmaker **Cyrix** in order to further develop low-cost PCs and information appliances • **AT&T** and **VocalTec** are cooperating in a new Internet telephony venture called **ITXC**, which will provide services for Internet telephony service providers (ITSPs) • **Microsoft** invested in **Navitel Communications**, which will now focus solely on designing and building software for Microsoft Windows CE, a platform for non-PC and consumer appliances • **VeriSign** will provide digital certificates for **Thomson Consumer Electronics'** RCA Network Computer, a set-top device, and its TV service provider **NetChannel**, giving consumers secure transactions through Internet TVs • **Cisco** is buying **Integrated Network Corp.**'s Dagaz xDSL

products, intellectual property, and personnel • **IBM** and **Gemplus** are teaming up to develop Java-based smart-card products and services for business needs • **Digital Semiconductor**, **IBM**, **NCI**, **Oracle**, and **Sun Microsystems** signed agreements with **The Open Group**, a standards organization, pledging to standardize network computer technology and establish testing and NC certification guidelines • **McAfee**, **Security Dynamics**, **RSA Data Security**, and **VeriSign** unveiled their SecureONE framework for network security, a set of cross-licensing agreements and application programming interfaces (APIs) linking their antivirus, authentication, encryption, and digital-certificate technologies • **AirMedia** bought bankrupt push-media vendor **IFusion** and will incorporate IFusion's Arrive software into its wireless Internet broadcast network. AirMedia will also license its wireless Internet antenna for PCs by **Hewlett-Packard** and **NEC** • **Durand Communications** acquired **Electric Minds**, the failing online community. Durand will host the site but the two will remain separate entities.

—A.D.

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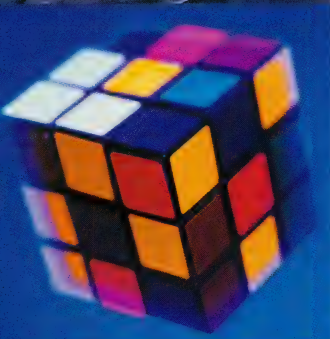
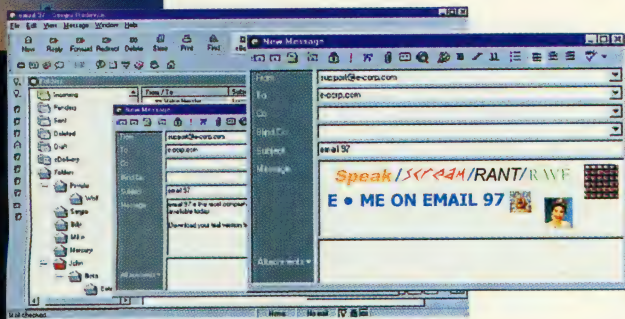


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CIRCLE NUMBER 17





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CIRCLE NUMBER 241

ADVERTISING

In Battle for Mind Share,
Promoters Proliferate

The days when you could launch a Web site and create a stir with no work are long gone. Anyone who has a Web site knows that the only people certain to spot a new site are those selling site-promotion services.

Hundreds of companies are now selling such services, ranging from "tip sheets" to sophisticated marketing campaigns. Prices range from \$50 for search-engine submissions to \$40,000 a month for full-blown PR and technology work.

Experts believe some type of site promotion is essential for anyone who wants to build site traffic. "Sooner or later, you're going to have to pay for attention," says Seth Godin, president of Yoyodyne, a company that runs contests designed to stimulate repeat visits.

But the recent flood of fly-by-night operators who offer nothing more than tips for beating the search engines are muddying the waters for legitimate promoters. Those "secrets" may be valuable for a little while, but only until the search engines change their algorithms.

"The search engines change their algorithms constantly," reports Kevin Manely, a vice president with WebPromote. His company is a leader in the field with a full-time staff of over 30. WebPromote tries to improve search-engine results for its clients and it constantly monitors the engines to stay on top of trends. It's so sure of its methods that it offers pay-only-

for-results payment plans (<http://www.webpromote.com>). WebPromote uses a variety of promotion methods including e-mail newsletters and online advertising. "Not everyone uses search engines," he explains.

For those who are determined to try to beat the search



engines on their own, Planet Ocean Communications offers a monthly Search Engine Secrets Update Newsletter (<http://www.hitmasters.com>). A one-year subscription is \$97; Mahaney says each issue covers changes at the search engines in the last 30 days.

Another common site-promotion tactic is e-mail releases to electronic and print media. Prices start at around \$200. Eric Ward of URLWire has a database of 4,500 editors. His prices range from \$500 to \$2,000, with the average campaign at \$600 (<http://www.urlwire.com>).

Serious marketers can subscribe to Web Digest for Marketers. Unlike most services in Web promotion, this one is free (<http://www.wdfm.com>). —Russ Lockwood

OPEN FOR BROWSING



Onsale, the online auctioneer, has split into two giant interactive auction sites: one especially for computer equipment



and the other for consumer-electronics goods. Bids are placed with credit card numbers (<http://www.onsale.com>).

Careers.wsj.com is a new job-listings site for upper-level technical, professional, managerial, and executive openings from *The Wall Street Journal*. In addition to listings, the site has tips on beefing up a resume and testing your "employability" (<http://www.careers.wsj.com>).

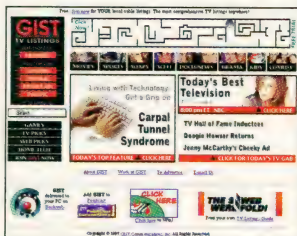
JavaScript Planet lets Web designers download any of 300 JavaScripts for free, including codes for cookies, visitor counters, passwords, scrolling text, alerts, 3-D images, buttons, clocks, and games (<http://www.intricate.com/javascript>).

Everything E-mail has a variety of e-mail resources such as autoresponders, redirection

services, e-mail software, ways to avoid spam, tips on starting a mailing list, and companies that offer news via e-mail (<http://www.ronin.com/pa-software/email.html>).

Thomson & Thomson's subscriber-based Saegis Trademarkscan will search for trademark information from 16 international trademark databases and search Web pages for occurrences of your trademark. A full-text trademark search is \$2.50 (<http://www.thomson-thomson.com>).

GIST TV Listings Guide is a nationwide television guide where you can search for programs by day or category. GIST also has listings for cable systems and major satellite



providers such as DirecTV, Echostar, Primestar, and USSB (<http://www.gist.com>).

BizTravel offers a new section for booking plane, hotel, and car reservations. You can also track your frequent-flier miles. (<http://www.biztravel.com>).

—Susie Davis

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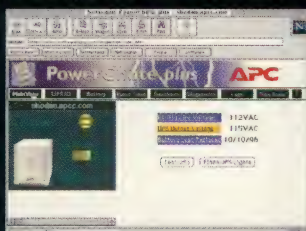
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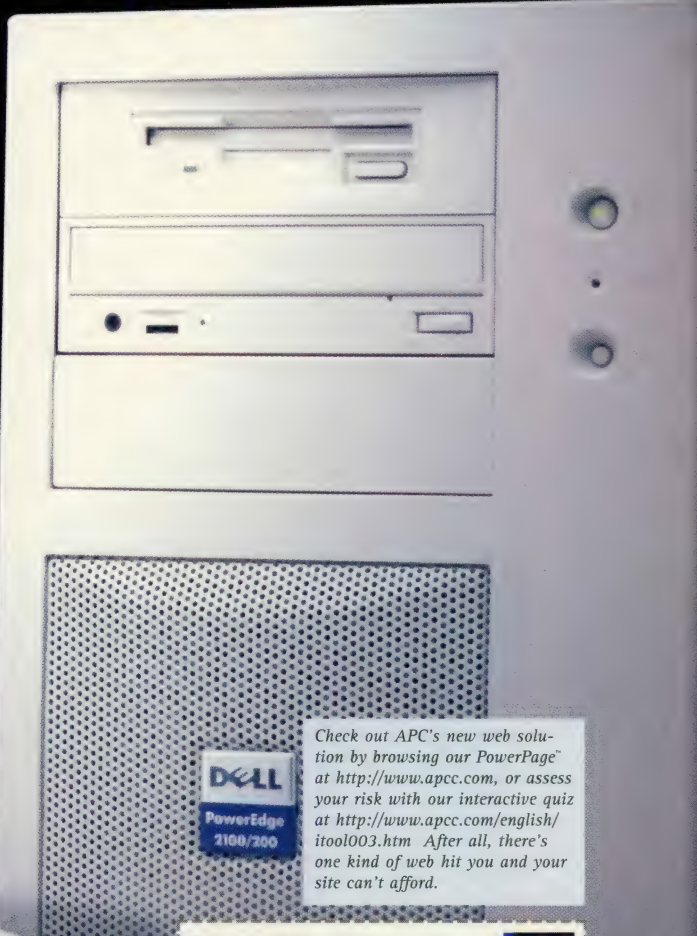
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CIRCLE NUMBER 67

CONTENT LABELS

James Kinsella of MSNBC and the ICC believes it's time for Web-site managers to stop letting software developers set "the rules of the game."

What is the Internet Content Coalition?

The ICC is a group of content producers who are focused on creating a healthy business environment on the Web. We began meeting a year and a half ago in reaction to the CDA [Communications Decency Act]. That was the initial issue, but it evolved over time into an organization that is entirely focused on getting content producers to focus on the *real* threat which media producers were completely overlooking.

Which is?

The threat of government or anyone setting guidelines on a burgeoning medium rather than letting the medium guide its own destiny. The threat is extremely real and it continues to be real. The CDA was foiled but that doesn't mean we're free of other threats that may arise.

You've argued that news sites should not rate themselves using RSACi but

instead a different labeling system should be created. Why is that?

Ratings clearly have their place for content producers like Disney, Warner Bros., and Playboy, who find it worthwhile. But that will not work with news. The levels of violence or nudity in a story will vary if you're trying to cover a Bosnian war-crime story or a breast cancer story. What news organizations should be focused on is saying, "We're about news and if you walk into our site you're going to get a diversity of content."

At a recent ICC meeting, a number of news organizations rejected the idea of a news label. Is it dead?

I think labels will survive, but news labels probably will not. Labels and categories are still important. ICC represents not just news organizations but entertainment and other content providers, and we're going to work for labels in those kinds of content.

How would labeling work?

In the HTML page's meta tag, you would put E for entertainment or a P for public affairs or G for government. The agent that is crawling to gather information about your site will see the tag, bring that information back to the search database, and categorize the site correctly. A comedy site might be under an Entertainment heading and a comedy subheading. There are other ways to do this, but if we don't do this, somebody else will.

If you look at the Web, it's a system developed by software publishers who have not been focused on developing content. The rules of this game have been made by people who are not

content producers. Content producers should be taking charge of how our content is being used, not just in the world of browser [rating] filters, but also in the

ABOUT JAMES KINSELLA

James Kinsella, general manager of MSNBC on the Internet, has been the editor of Time magazine online and Pathfinder. He and Maria Wilhelm of The Well organized the Internet Content Coalition (<http://www.netcontent.org>) in response to the Communications Decency Act; Sony, The Well, and Playboy are among the members. Recently, the ICC took a lead role in the debate on whether news sites will rate themselves.

world of search engines, and soon by aggressive [search] agents making decisions, often random, on the kind of content they're running into. We should be proposing a structure on top of the content.

Many content producers are taken aback when they go to a search engine and discover their content is in a category they would never consider it to be part of. They don't have control over that decision.

What happens if people mislabel?

What happens in the real world? Do pornographic magazines label themselves as news? No. Mislabeling will be rare.

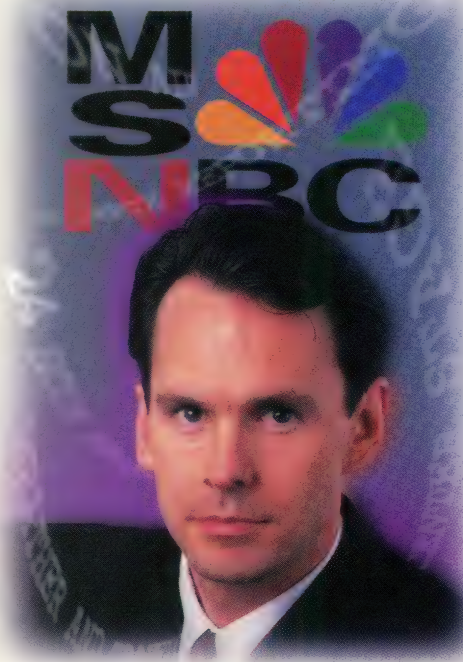
What's your position on the current plan for assigning new domain names?

We're not satisfied that it takes into consideration the concerns of content producers. You could imagine having a "news" suffix or an "entertainment" suffix. None of this was considered, even though content producers create most of what is on the Web. We want to be at the table and make certain our concerns are heard. We're at a special moment in time when the Web is still being formed. We've got an opportunity to influence that.

How will you advance these ideas?

We're planning a conference for January where we hope to educate content producers on the value of their intellectual property.

—G.V.



"The rules of this game have been made by people who are not content producers."



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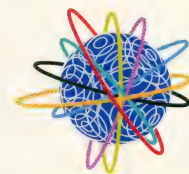
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CIRCLE NUMBER 1

INTERNET-BASED FAXING...AUDIO ON DEMAND...INTRANET IN A BOX

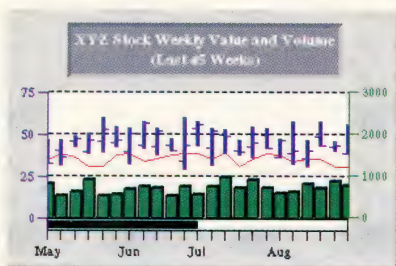
BackWeb 3.0 is the latest version of the enterprise push software, with real-time IP multicasting for instant delivery, such as time-sensitive data sent over an intranet. BackWeb allows corporations to customize the interface and controls, and a Publishing Wizard lets anyone in the company publish information, software, or files, without programming. BackWeb also announced a Java-based Unix client for Solaris workstations, HP UX, and SGI workstations. Internet and intranet packages start at \$10,500 (<http://www.backweb.com>).



single, uniform database. Pricing for a typical installation (with 50 data sources), including interface software, database creation, and license, is \$150,000 plus about \$150,000 per year to publish and update the database weekly (415-522-9494 or <http://www.junglee.com>).

Audio Highway's audio-on-demand service offers downloadable digital audio from its site. Current content providers include The Associated Press, National Public Radio, CNET, and Penguin Books. Audio content with commercials is free; commercial-free audio at \$3 an hour will be available by the end of the year. A "Listen Up" player (\$299) for joggers, commuters, and other mobile listeners was expected in September (<http://www.audiohighway.com>).

NetCharts by NetFactory is a set of Java-based business and



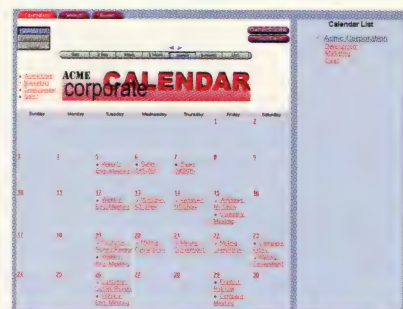
engineering charts for PCs, Unix, and network computers. Ten major chart types (such as bar, pie, xy, and stock) can be pasted within HTML documents or stand-alone Java apps. Full JDBC support means that

a chart can be quickly created by passing an SQL statement. Price is \$395 (301-625-5600 or <http://www.netcharts.com>).

Internet Background Check from Privacy Inc. is a utility that scans

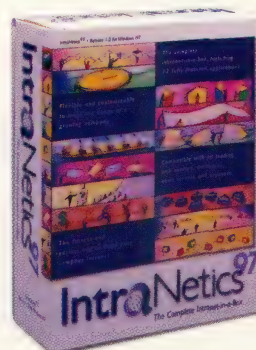
online databases from government and law enforcement agencies, ostensibly so users can determine errors or mistaken identity. Categories scanned include deadbeat parents, wanted and missing persons, registered sex offenders, and arrest/prison. In addition, a Cyber-Bodyguard sends an e-mail alert if your name appears in a new or updated database. Cost is \$29.95 per year (<http://www.privacyinc.com>).

WebCatalog and **WebMerchant 2.0** by StarNine, a subsidiary of Quarterdeck, are online storefront-builders for Windows NT and Mac. WebCatalog is a database for Web retailers that can be administered through HTML template files, is searchable, can look up zip code and tax information, and calculates shipping. The WebMerchant companion application processes credit card orders, can support First Virtual payments, sends confirmations to customers, and tracks the transactions. WebCatalog cost is \$2,495; WebMerchant is \$995 (800-525-2580 or <http://www.starnine.com>).



EventCenter from Amplitude is server software that helps you list event notices and calendars online. No HTML knowledge is needed to publish or subscribe to event info, and maps, sounds, video, and links can be added to event announcements. A calendar interface lets users view events by day, week, month, or year. Price for a one-server license for unlimited users is \$2,995 (888-779-2600 or <http://www.amplitude.com>).

IntraNetics 97 is "intranet in a box" software for small to medium-sized businesses. Its 17 applications can be quickly deployed in an intuitive interface and include org charts, employee records, in-house job listings, employee expense reporting, a corporate calendar of events, company-newsletter publishing, and customized news feeds. Applications-only version is \$4,995; Netscape or Microsoft server-software versions are \$7,495 (888-932-2600 or <http://www.intranetics.com>).



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Speedware OrderPoint

provides a framework for business-to-business ordering and transaction tracking. The program includes separate screens for ordering, shipping, and tracking information. OrderPoint has password protection and can operate in SHHTTP and SSL environments. Price is \$30,000 for NT version; \$40,000 for Unix (800-447-0745 or <http://www.speedware.com>).

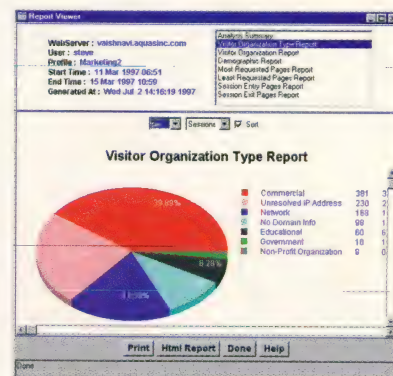
Pool	Messages	Avg. Resp. Time	Status
Orders	3	00:17:36	2 Low
Platinum Support	2	00:09:25	2 Normal
Preorder	5	00:22:57	2 Normal
Sales - FlatCenter	3	00:11:24	3 Low
Sales - General	10	00:09:13	5 Moderate
Sales - IMC	6	00:12:42	3 Normal
Sales - LiveCenter	12	03:36:48	4 High
Sales - QmodemPro	8	00:21:51	4 Moderate
Sales - Wildcall	5	00:13:54	2 Normal
Sales - Win Server	5	00:17:23	5 Normal
Support - FlatCenter	2	00:14:34	2 Normal
Support - General	8	00:08:12	1 Low
Support - IMC	5	00:15:43	2 Normal
Support - LiveCenter	2	00:13:58	2 Low
Support - QmodemPro	3	00:07:56	4 Low
Support - Wildcall	7	00:16:21	3 Normal
Support - Win Server	10	00:15:32	4 Moderate

tracks response times to those messages. The program sits on top of an existing SMTP server and can generate reports to locate and ease e-mail bottlenecks. License is \$1,500 per server (805-873-2500 or <http://www.mustang.com>).

free trial version available (619-278-5900 or <http://www.contigo.com>).

E.P.I.C. 1.0 from Equitrac Corp., for Windows 95/NT, tracks employee Internet access, blocks over 60,000 porn, leisure,

and hate-material sites, and allows online time to be assigned to a specific user, project, or accounting code. The client/server software will also track all sites visited and e-mails sent, and can be customized by department, time of day, or workstation. Price is \$99 (800-327-0183 or visit <http://www.equitrac.com>).



report tool analyzes employee use of the Net and lets them see their own usage. An autoscheduler generates reports at specified times and gives e-mail alerts when a particular visitor or error is seen on your site. And a Watch function shows a moving graph of current page hits. Windows NT or Solaris

IntraPower Suite 2.0

from Oblix has ready-to-use Java-based applications to get a company intranet running. Features include an employee directory (including L D A P support for the Netscape Directory Server), org charts, group document-access control, a room scheduler,

enhanced searching, and an administration console. IntraPower works on Windows NT and Solaris. Pricing starts at \$20 per seat (408-524-9700 or <http://www.oblix.com>).

The Internet Message Center

from Mustang Software is a Windows NT application for departments like corporate help desks and sales forces. It helps route e-mail messages coming in from addresses like help@bigcorp.com by scanning for keywords and routing items to the correct person. It then

MarcSpider service from Digimarc searches the Web for digitally watermarked images and generates monthly reports listing the Web pages on which they were found. It enables artists and photographers to track both authorized and unauthorized uses of their works via their content-creator ID numbers. Yearly subscriptions are \$99 (503-223-0118 or <http://www.digimarc.com>).

Itinerary Web Presenter 2.0

from Contigo Software lets users conduct presentations over the Internet by becoming "pilots" who guide an audience's tour through a PowerPoint or a Corel Presentations 8 show. There are chat windows for interactive discussions, speaker notes, and a pointer. Pricing starts at \$195 for one presenter and five remote audience members;



Sun Directory Services 1.0 is scalable, interoperable LDAP-based software for managing and integrating company resources, such as users and applications, from a single point on the network via a Web browser. It can be used with Unix and Windows 95/NT clients as well as network computers such as JavaStations. Cost is \$995 (800-786-7638 or <http://www.sun.com>).

Bazaar Analyzer Pro 2.0

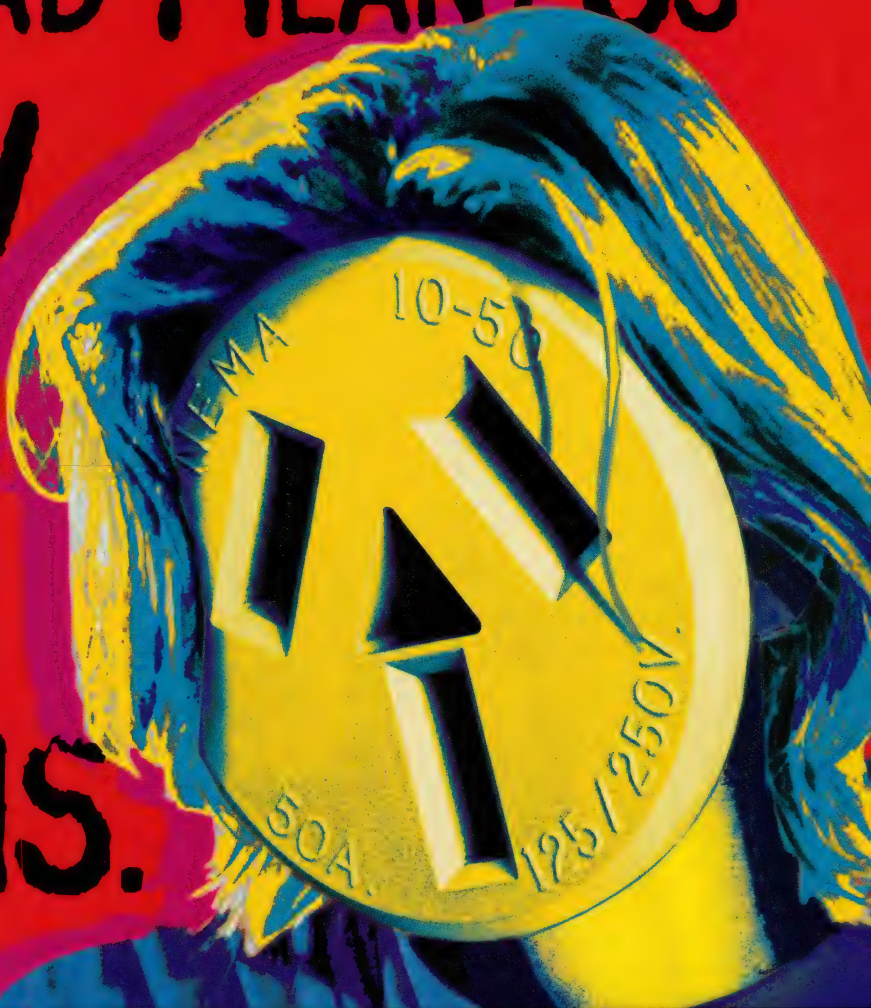
from Aquas is a Java-based, real-time Web-analysis tool that lets you see your visitors' paths through your site, with graphical displays of the order of pages and time spent on each. A proxy-

required; there's optional ODBC database support. License is \$320 for a single user; \$999 for unlimited; \$1,999 for unlimited with ODBC compliance (<http://www.aquas.com>).

StreamWorks 3.0 by Xing is server and player software for broadcasting audio and video across corporate networks or remote video-serving markets such as distance education. The MPEG-based product delivers multicast or unicast multimedia transmissions over any TCP/IP network to any browser, from live streaming video to file-based video delivery. Cost is \$60 per seat for a 50-seat package; \$40 per seat for 300 seats. Encoder for live broadcasts is \$4,000 (<http://www.xingtech.com>).

—Jay Blickstein, Susie Davis, Amy Dunlop, Ted Stevenson

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The Trouble with Java

Java has arrived—but is it worth the trouble? **BY JOEL SNYDER**

We call her “La Pompa,” an Italian-made, pump-driven espresso machine. It provides my office with the best espresso in North America. And that’s the only java we use: Sun’s Java programming language creates too many potential problems to even consider using it.

There continues to be a lot of confusion about Java: what it's good—and not good—for. Here are a few things to consider when deciding if Java is for you.

OBJECT LESSON

Java is an *object-oriented* language. Traditional programming languages, such as C and Perl, are “procedural” and consist of a series of procedures that tell the computer what to do.

In an object-oriented language, the emphasis is on the information a program manipulates. Bits of information (data) are grouped together into "objects," which have rules for how they can be manipulated. And because most programs essentially move bits of data from one point to another, anything that can enhance this process is especially desirable.

Java was also designed to be an object-oriented environment, including the Java Virtual Machine (VM), which is supposed to provide true platform independence. With the Java VM, you can, it claims, write a program once and have it run on Windows, Macintosh, Unix, OpenVMS, MVS, you name it. However, it seldom works as promised.

Nevertheless, Sun Microsystems touted Java as the premiere Internet application implementation tool. This impression was confirmed when Netscape agreed to build Java into its browser.

BREWING JAVA ON THE NET

When you talk about Java in the context of the Internet, there are actually three places you find the language.

The first is on the Web server itself. Servers run programs to build Web pages on the fly, handle indices, utilize shopping cart applications, or search databases. These can be written in Java. (In this case, the choice of language is insignificant to the client user.) Large Internet applications, where the traditional Perl breaks down quickly, are greatly enhanced by the added power of Java. Platform independence isn't critical here, but the other benefits of object-oriented software development are.

Many programmers are turning to Java for server-side Internet applications. However, from the client's point of view,

the server side. Client-side Java shows up in two different ways: JavaScript and Java applets. (Actually, JavaScript and Java applets can run on Web servers as well.)

JavaScript is a simpler version of Java. When a Web client (such as Navigator or Internet Explorer) supports JavaScript, the page author can modify the behavior of the Web client somewhat. JavaScript isn't full Java—it's a small scripting language that complements Java applications which can run on both the client and the server. Web pages written in HTML may have bits of JavaScript on them, embedded in the pages as comments.

JavaScript programs don't have the full strength of Java behind them, but they are powerful enough to control and modify the Web browser. This lets the application developer go beyond the standard click-to-do-anything model of the browser, although usually in a fairly simplistic way.

One of the first examples of JavaScript in a Web page was in an online ordering form: The form automatically calculated totals and sales tax as the customer filled it in, before hitting the Submit button. JavaScript has also been used to add animation to Web pages, change page content based on the location of the mouse, and build interactive chatrooms.

The next step up from JavaScript is a Java applet. Java applets are not embedded in Web pages; they are downloaded separately as precompiled objects. Like all Java applications, a Java applet runs in the Java VM.

Java applets have a huge amount of power available to them. However, they are tightly constrained by the Java VM they live in. For example, although the full Java VM has access to the network facilities of



this is immaterial: You can't tell which application is generating the data stream your Web browser is reading.

The other two places you can find Java are on the client side, as opposed to

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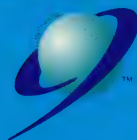
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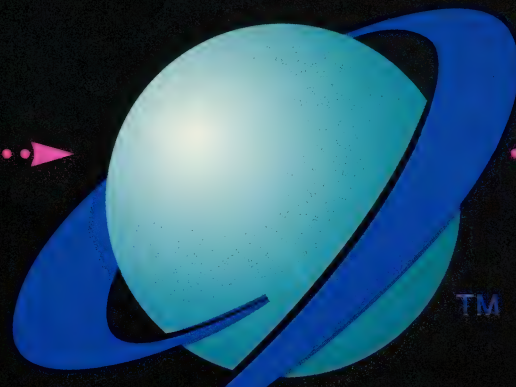


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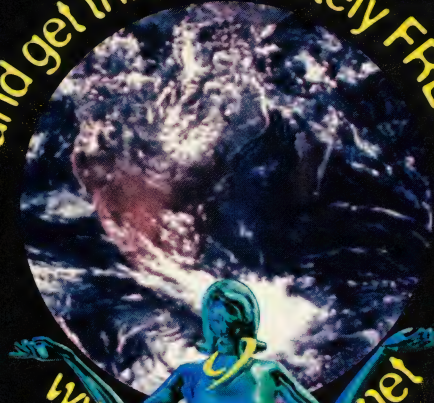
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its host operating system, the secure applet VM can only make connections to the server it originated from.

TANGLED WEB

Despite its benefits, the implementation of Java raises some serious concerns both for network users and application designers.

The security issue is the biggest problem. Java security is based on blind faith. You must trust that your Java implementation is perfect, has no bugs, and that the Java applets and JavaScript you download are not designed to be malicious (i.e., the result of some destructive Internet prankster).

When the basic purpose of a tool is to connect to a network so it can download and manipulate data, you've got to have a lot of confidence that it isn't going to go berserk. And in the case of Java, I don't.

Now, you might say, you can extend that argument to any network application: If I don't trust Java, then why should I trust Netscape Navigator or Microsoft Internet Explorer? That's a good point, but there's a big difference between what Navigator

does with a page of data and what Java does with an applet.

When a Web browser reads a page, it interprets the HTML code: centering, bolding, pulling in graphics, and so on. There are no operations in HTML to say "read this file from disk" or "send this data across the network." Any security bugs on the Web browser will be due to extensions by the vendor or some other error. On the other hand, Java is a complete programming language. HTML can be explained to a novice in about 10 minutes; Java is as complex as any other programming language. The potential for bugs in a system is directly related to the size of the system, and Java is big.

While there are some standards afoot to help you identify where a Java applet originated, none of these are supported in today's

browsers. More importantly, the security experts designing these security measures have hopelessly naive ideas about how much bother people will go through to keep their computers secure.

The other problem with Java is its lack of compatibility. Like most programming languages, Java has a specification that controls how it operates. That's fine, except that the two major places you'll see Java operating in the client—Navigator and Internet Explorer—are not perfectly compatible with each other. This is directly antithetical to the nature of Java: The language is supposed to be ubiquitous, so that you

only have to write your application once.

For example, one of my clients makes historical data on agriculture available over the Internet. The company uses Java to assist the reader of the data in analyzing and summarizing the information. But it had to "just say no" to Microsoft because its Java implementation isn't compatible with Netscape's.

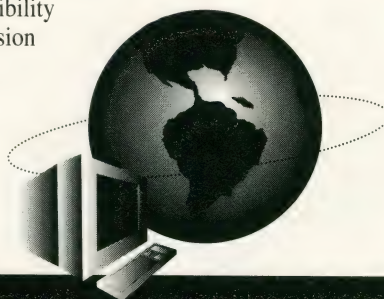
**THERE CONTINUES
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CONFUSION
ABOUT JAVA:
WHAT IT'S
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PROTECTING YOUR PRIVACY

If you're an Internet user, you may want to consider disabling JavaScript and the Java language in your Internet browser if you have anything on your computer that needs to be kept confidential. On a private network, where you trust your server, Java is a great tool. But on the public Internet, the potential for loss or the unauthorized disclosure of data is high.

If you're an Internet developer, counting on Java being present in your client's public Internet is a bad idea. Of course, if you're on a private intranet or if you have a special relationship with the people using your site, you may be in luck. However, if you can't convey your message without using Java, you should reconsider your design.

Finally, disregard what people say about how wonderfully portable Java is. Only the most rudimentary applications will work across platforms. This will probably get better over time, but it's going to be a while before we get to that stage. ■

Joel Snyder (jms@opus1.com) is a senior partner at Opus One, an IT services firm, in Tucson, Ariz.

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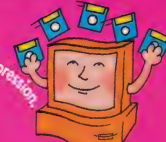
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Edited by Jay Blickstein

Rough Start for NC Design

Tektronix NC215 BY SEAN FULTON

In the early days of the jet age, engineers took away fighter planes' propeller-driven engines and bolted jet engines onto the wings. The planes were difficult to fly and unwieldy to service, but they did prove that the idea of jet flight was practical.

The Tektronix NC215 is similar to those early jet models. Although much anticipated as the first fully functional network computer (NC), the NC215 is essentially an updated X terminal that can run a Web browser native on the terminal as one of its applications. Nevertheless, it's a start.

The NC215 is built around a 100MHz NEC4300 CPU, and although the machine comes standard with 8MB of RAM, the model we tested came with 40MB. The unit supports both 10 Base-T and 100 Base-TX networking, which an optional MPEG-1 video card can use to produce 30 frames per second, full-motion video on the monitor.

A SHOT OF JAVA

Tektronix is a leading manufacturer of X terminals, and as such the company has experience working toward the original goal of MIT's X Window System, which was to put a low-cost, diskless graphical workstation on users' desks and run applications from other machines on the network.

This is essentially the same profile promised by Java-powered NCs, but here there's one big difference—Java applets designed for Internet use can run on the NC215, providing users with a wealth of new tools not available on a standard X terminal.

Setting up the NC215 is identical to setting up an X terminal. The machine can either load its software from a ROM in the terminal itself or from a server on the



Tektronix is first to market with its NC. Though the unit is basically an updated X system with an added native Web browser, it's a hint of things to come in thin-client network computing.

network using NFS or TFTP. Fonts and configuration files have to be loaded from a remote host.

Once the NC215 has booted its X software, a built-in configuration utility allows you to connect to networked hosts using XDMCP, Telnet, LAT, or WinDD. WinDD, a variation of Citrix WinFrame, allows Windows programs to run on the NC. Our test unit was fast and easy to work with, and it presented no operating glitches.

Launching the Navio NC Navigator, the NC215's "native" Web browser, requires that the software be loaded from a remote server to the NC. The user needs to telnet into the host system and launch a utility that runs Navio on the local terminal screen. This is not the most intuitive approach to launching what Tektronix touts as a "killer app" for this product.

The Navio browser itself is similar to Netscape Navigator 3.0, and it includes the same e-mail features found in Netscape. It also comes with a built-in

Java interpreter, which allows the browser—not the NC's operating system itself—to run Java applets.

Since most of the supported Unix platforms, including Sun, HP, DEC, AIX, and IRIX, support the X Window system, you can run any X application from those machines on the NC215, including the Motif Window Manager, the X Display Manager program (XDM), and even the SCO Session Manager on SCO's enterprise server.

TRICKS WITH NT

Using a Windows NT server to feed the NC215 is a bit tricky. Although Tektronix ships application software that will run on Windows NT and allow an NT server to serve the NC215, the only download method supported for NT is NFS Server. If the NT machine has an NFS Server package, the odds are that there are Unix machines on the network, and these machines are more suited than Windows NT to hosting an X terminal.

Tektronix would do well to develop a means of downloading software to the NC215 that is native to NT, eliminating the need for Unix systems (or Unix network software) to be running. Like the company's line of high-performance X terminals, the NC215 can be used over a serial line and modem for remote connections.

The package we evaluated came with a 15-inch generic monitor and an equally generic PC-style keyboard; both were

FAQS & FIGURES

Tektronix NC215

Price: \$1,495

Platform: Windows NT; Unix

Tektronix Inc.

<http://www.tek.com/VND>

(800) 547-8949; (503) 682-7300

functional but unexceptional. You can also purchase the NC with a monitor as large as 21 inches, or without a screen or

keyboard. (Tektronix calls the latter package "logic only," which is market-speak for "just the box.")

While the NC215 is clearly a bleeding-edge hybrid, it does provide some insight into how the NC may evolve. Its usefulness, even as an X terminal with a native browser bolted onto it, proves the NC concept is viable—and it gives engineers, developers, and users a look at things to come.

Beyond Active Server Pages

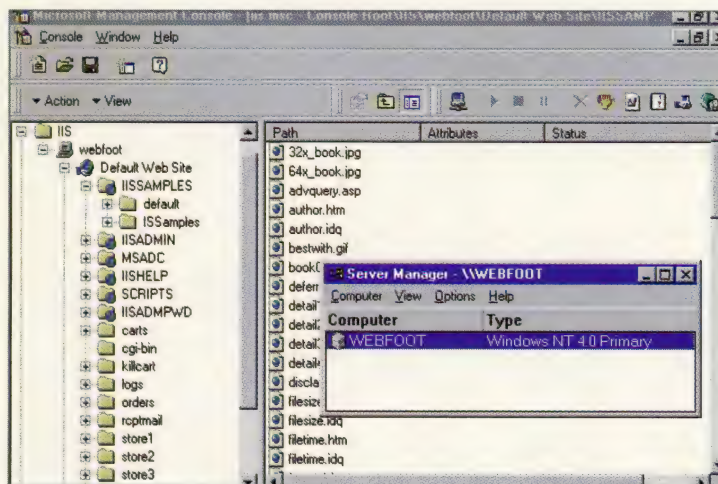
Microsoft Internet Information Server 4.0

Once upon a time, Web servers sent HTML pages to browsers and occasionally ran a CGI script. The fact that Microsoft calls Internet Information Server 4.0 "The Transactional Web Server" says a lot about how much the Web server's mandate is changing—and it seems to be moving toward business uses and running applications. This latest version of IIS, due for release in the fourth quarter, expands the product along a broad front and should appeal especially to ISPs and Web-application developers.

The list of new features in IIS 4.0 (we looked at Beta 2, the latest version available at press time) starts with support for HTTP 1.1, the new standard protocol for managing Web pages. The most dramatic gain is a long-sought-after ability to run multiple Web sites on a single server using one IP address. Microsoft did some fancy technical tap dancing to make this work for browsers that don't support HTTP 1.1 Host Headers, but it was worth the effort since it greatly increases the availability of the sites.

Not that implementing multiple sites is easy: To control runaway server hits, for example, you can "throttle" the bandwidth allowed to each site, but the mechanism for doing this is murky.

Microsoft does recognize that managing a more complex Web-server environment requires (much) better tools than were available in previous versions.



IIS 4.0's Performance Monitor looks much like its Windows NT counterpart, but includes vital Web-server measurements such as cache usage.

That's why IIS 4.0 sports the first incarnation of the Microsoft Management Console (MMC). Slated to be the standard systems administration interface for all Microsoft server products, including Windows NT 5.0, MMC is a suite of components. In IIS 4.0 this includes access services for the Internet (WWW, FTP, NNTP, and SMTP), Microsoft's Transaction Server, and Index Server.

These components, called snap-ins, all fit within the Windows Explorer-style user interface and are available in both a Windows program and browser (HTML) version of MMC. This provides relatively easy access—even remotely—

to application, directory, and file properties and exposes many important (and previously unreachable) controls.

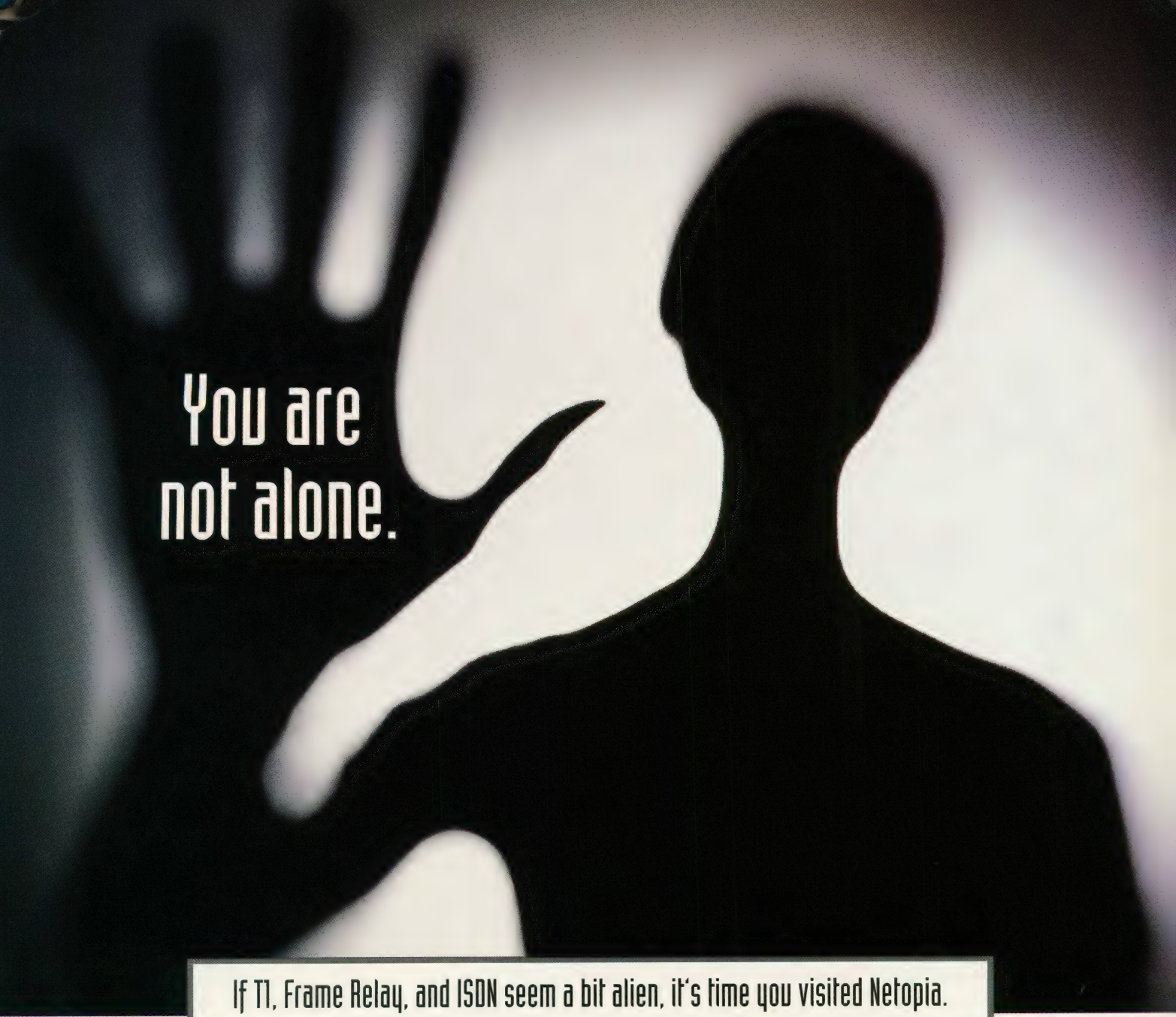
Another major addition to IIS 4.0 is the incorporation of Microsoft's Transaction Server 2.0. This will have a big impact on the operation of IIS and its programming environment. In a way, it picks up the trail started by IIS 3.0 with the addition of Active Server Pages

(ASP), which generate Web content dynamically using scripts written with JavaScript or VBScript. Now Microsoft is wrapping ASP in the safety net of transactions. For example, using Transactional Active Server Pages, you can roll-back a customer catalog order that is interrupted.

This brings a level of security to business applications at a Web site that used to require exquisitely difficult programming. Microsoft has attempted to add transactional functionality without losing (more) performance from ASP. The Transactional Server

also manages elements such as ActiveX controls within ASP and is responsible for activating or deactivating them as quickly as possible. In our tests, performance for transactions under ASP was clearly better than running them as a CGI process, but it's still not clear how effectively transactional pages will fare in the real world under heavy demand.

Other improvements to the ASP environment include a very welcome debugger. It's not up to the level of debuggers found in mature client/server development systems, but HTML debugging is notoriously slow and inefficient, and this is a step in the right



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direction. So are the improvements in database connectivity, such as a single API for accessing ODBC or OLE DB and the ability to maintain open connections for multiple requests to frequently used data sources (called connection pooling).

We also like the fact that IIS 4.0 can now act as an SMTP mail client, which makes it easy to program a wide variety of e-mail-based services like customer-order confirmation.

Putting together bundles to beat the competition is one of Microsoft's specialties, and this version of IIS is especially loaded. Besides the Transaction Server, Index Server 2.0 provides a search facility for HTML data on a Web site and has been upgraded to use SQL queries. A new Certification Server has been added to supplement the security provided by Windows NT; its role is to manage digital certificates that authenticate users before allowing them to access a Web site.

Site Server Express is a limited version of Microsoft Site Server that analyzes

FAQS & FIGURES

Internet Information Server 4.0

Price: Not set at press time

Platform: Windows NT

Microsoft Corp.

<http://www.microsoft.com/iis>

(800) 426-9400; (206) 882-8080

site structure and usage. It's a useful tool that simplifies the extraction of site visitor information from the new IIS log file (which now conforms to the W3C standard format) and monitors the content of a site.

With all its components and new features, IIS 4.0 is one big package—although we've seen from Microsoft's previous Internet products that you usually have to buy the house if you want the kitchen. Although this beta seems quite stable, much of the programming is new, relatively complicated, and needs to be tested in the real world. We hit a few snags in the installation of the MMC browser program and in operating multiple sites, and there will be more.

Taken as a whole, however, this is a very competitive framework for sophisticated application development and complex Web-server management—and a very long way from 1996's IIS 1.0, the simple Web server of yesteryear.

—Nelson King

Setting Up Shop, Step by Step

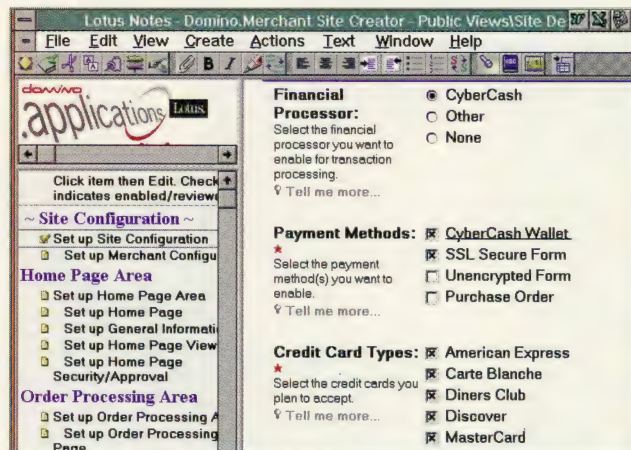
Lotus Domino.Merchant

Lotus has amplified the Web-server capabilities of Domino (formerly known as Notes) with a series of programs called Domino.Applications. The Domino.Merchant application gives a business everything it needs to set up an electronic-commerce site on the Web. Its biggest benefit, however, is that it keeps companies from getting bogged down in the intricacies of Web-site design and gets on with the business of cyber-selling.

When I installed Domino.Merchant on a Notes server, an install shield wizard popped up to prompt me through the initial set-up stages. If you've previously installed any of the other Domino.Applications components, such as the Domino.Action Web-site creator, you'll be reminded that existing files may be overlaid; unfortunately, those file names are not specified. Once the initial components are installed at the Notes server, the remainder of the set-up and configuration process can be completed from either a Notes client or a Web browser capable of accessing the Notes/Domino server.

The first step in the site-generation process is called, logically enough, Configure Your Site. You can choose from a number of Web-page templates, including Home Page, Products and Services, Order Processing, and Storefront. You can also add pages such as Job Opportunities and About the Company, as well as attach your company logo (any GIF file will do).

In the Merchant Configuration step, you select what kind of payment methods you will accept (such as CyberCash or a variety of credit cards), whether you will use Taxware software to calculate taxes, and whether you want to use a table for calculating shipping costs. You can also



During the site-creation process, Domino.Merchant lets you choose which credit cards (or CyberCash) you will accept for payment.

provide the text for the messages shoppers will receive as they select your merchandise.

Next, you need to create the look and feel of your Web site. I chose the Quick (as opposed to Custom) Design option and decided to stay with the default parameter selections for page backgrounds and so forth, based on my experience with Domino.Action, whose defaults provide well-formatted Web pages. Once you're satisfied with the design of your site, the design documents are generated; depending on your hardware and network, this can take anywhere from 5 to 30 minutes. The set-up process then asks if you want to modify the Web-page areas selected in the site-configuration step; in most cases, I was satisfied with the template settings.

One particularly nice part of Domino.Merchant is its security setup. Here, you can select from the Notes Name and Address books those people in your company who will be able to modify the content of any Domino.Merchant page.

I ran into my first problem when attempting to generate the Web site by running Domino.Merchant's App Assembler: I was unable to run App Assembler from my Pentium/NT workstation. I received a cryptic error message indicating that the library database could not be found. Everything else appeared to be in order, so I ran the App Assembler

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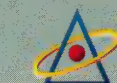
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from the server. This time it ran to completion, but took 45 minutes. The last step in the generation process, Finish Your Site, took another 15 minutes or so. One caveat: If you want to add, delete, or change an area in your site, you'll need to go through parts of the configuration process (and all of the App Assembler process) again.

Creating content for a Domino.Merchant site, on the other hand, is relatively straightforward. Indeed, this is where the

advantages of the program over other Web-site creation and publishing tools are most evident. Anyone within an enterprise, including marketing and order-department workers, with the appropriate access can create or modify content on the site from any Web browser or Notes client with a minimum of support and training.

Once pages have been edited, you can either submit them immediately or put them into a hold status for later release. One wrinkle here is that even if you make no changes to a page, you must click on Edit before you can publish it to the site.

After you've entered information on features and pricing for your products, shoppers will see a link on that Web page that allows them to add products to their shopping basket. When shoppers are done with their selections, they enter

Domino.Merchant's check-out process, which is based upon the parameters set during site configuration.

Once an order has been placed by a shopper, it can be processed using one of the three main Merchant View categories: All Orders, Orders Outstanding, and Processing Errors. Each order passes through a sequence of Ordered, Payment Authorized (by CyberCash or other payment system), Paid, and Fulfilled. If payment authorization is denied or there is a communication failure, the order is moved into the Processing Errors view.

Domino.Merchant offers an inexpensive alternative for rapid development and deployment of an electronic-commerce Web site. It effectively combines the traditional strengths of Lotus Notes and the economic value of selling on the Web.

—Mike Fichtelman

FAQS & FIGURES

Lotus Domino.Merchant

Price: \$1,295

Platform: Windows 95/NT; OS/2; Unix

Lotus Development Corp.

<http://www.lotus.com>

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Backing Up on the Web

Atrieva 1.0

An intriguing development in the Internet realm is the transfer to the Net of functions and services traditionally based on local computers or networks. A good example of this trend is Atrieva, a back-up and file repository system that stores data on a remote site and transfers it over the Internet. This means you can store and retrieve files from anywhere you can connect to the Net.

The top three requirements of a back-up system are: invulnerability, a large enough storage capacity, and accessibility when you need to restore data. Back-up systems on desktop computers seldom have enough capacity and most are far from bulletproof. Few laptop computers have a back-up system worthy of the name. LAN-based systems, on the other hand, have essentially unlimited capacity and seldom fail, but recovering a file often requires time-

consuming intervention from tech support. With storage, the issue is that files need to be where you can get at 'em when you need 'em. Many of us work on more than one computer—such as a desktop

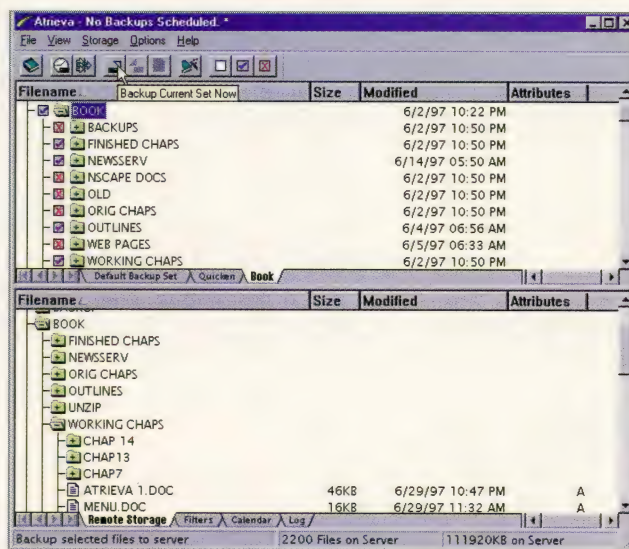
Enter Atrieva. It offers unlimited storage space on a network that's accessible from anywhere you can connect to your Internet service provider. Atrieva will scan your files for viruses before storing them and encrypts all data before transmission. And the company guarantees that its storage is completely, and redundantly, bulletproof.

At what cost? Unlimited storage on the Atrieva site goes for \$14.95 per month—comparable to the cost of your basic local phone service and a bit lower than your monthly ISP charge.

To get the software, go to the Atrieva site (<http://www.atrivea.com>) and download the version of the client that works with your operating system. When you sign on, Atrieva e-mails you a password that will log you on to the registration system. Your permanent login and password are stored in the system; if you choose, Atrieva can make a "recovery disk" that contains this information.

Atrieva stores data in "back-up sets," groups of files that you treat as functional units. You could, for example, have an all-inclusive default set that's backed up once a week, and smaller, more specific sets that

are stored more frequently, such as your Quicken files, the reports you work on every day, or the chapters of your novel.



Atrieva's split screen lets you view files remotely as well as locally; you can drag and drop to store files within a back-up set.

and a laptop, or two desktop systems in different locations—so data accessibility becomes further complicated.



Back-up sets are structured around the directories or folders of your computer's file system. Atrieva's easy-to-use system lets you specify one or more directories, including or excluding any subordinate directories, down to individual files.

Moreover, you can filter your set definitions to include or exclude specific file types. (For example, you might specify all the .DOC and .XLS files in Windows Explorer's MyDocuments directory.) Creating a new back-up set takes a few minutes at most; you can have as many as you want.

When you're ready to back up a set, Atrieva will scan the files for viruses—or not, if you change the Options settings. It then compresses and encrypts the files, dials your modem (if you're using a dial-up connection), hooks in to the Atrieva Internet site, sends your files, and finally synchronizes catalog

FAQS & FIGURES

Atrieva 1.0

Price: \$14.95 per month

Platform: Windows 95/NT

Atrieva Corp.

<http://www.atriva.com>

(888) 287-4382; (206) 654-5300

information (the program's term for indexing data for multiple remote copies) with the site.

As you might expect, each back-up set can be scheduled for automatic, unattended backups, and the scheduling system seems flexible enough for just about any needs.

Retrieving files is as simple as storing them. You select the back-up set—or any part of it—you want to look at. Atrieva doesn't overwrite your existing directories; it re-creates the tree structure in its own file space and writes the files there. You can then move or copy them as you like.

The caveat that occurred to us during our tests is that while the Internet is open 24 hours, it's not guaranteed to be a smooth road for your back-up and retrieval traffic. Internet service providers may occasionally be out of action; modems can be temperamental or even fail.

These possibilities aside, Atrieva will always deliver your files back to you—eventually. Is this good enough? That's your call.

—Ted Stevenson

E-Mail Without The Headaches

Eudora WorldMail Server 1.0.1

Administering an electronic-mail server can give your company greater control over its messaging needs; the server that hosts your Web site can provide mail services as well. Taking e-mail in-house, however, can be a major headache for most smaller organizations. You'll need to make a major investment of time and energy to set up and administer most e-mail servers, which tend to be geared for the larger enterprise (see Server Manager, Sept. IW).

That's why Qualcomm's Eudora WorldMail Server 1.0.1 is such a welcome relief. It can be set up as a simple server to shuffle e-mail on an intranet, or it can be configured to use cutting-edge e-mail protocols. Its pricing is reasonable—a 25-user bundle of WorldMail Server and the Eudora Pro client software, for instance, is only \$1,500. And it's easy to administer, yet powerful enough for larger organizations.

Most noteworthy is the WorldMail Management Center, which allows remote system administration. The Management Center can be installed on multiple machines, so system administrators can, if

they choose, work at home. It shows the entire directory structure of the mail server, including multiple domains (if you decide to support them), current connections, and system-resource usage including memory, bandwidth, and cache specifics. The Management Center also provides access to message log files, as well as hits on the package's Internet Directory server.

Along with the familiar Post Office Protocol (POP), all the trendy e-mail protocols are



WorldMail's Management Center tracks system-resource usage and other server functions; it also can be set up for remote administration.

supported, such as IMAP-4, which allows messages to be stored and managed on the mail server. Also supported are emerging standards for Internet "White Pages" including the powerful Lightweight Directory Access Protocol (LDAP) and the older Ph protocol. In addition, a Web/Directory Gateway allows browsers to access a WorldMail directory or any LDAP or X.500 directory server.

Java applets included with WorldMail Server allow users to change passwords, create auto-reply and vacation messages, and perform other user-administration tasks directly from their Web browser.

Eudora WorldMail is a godsend for the small- to medium-sized company—as well as an intriguing option for larger corporations.

—Kevin Reichard

FAQS & FIGURES

Eudora WorldMail Server 1.0.1

Price: \$179 for 10 mailboxes; \$1,875 for up to 500 mailboxes

Platform: Windows NT 4.0 or higher

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Match Making for the Masses

If we're all related, why shouldn't a Web site be able to match us up?

The concept behind "six degrees of separation" has inspired everything from a play to a Hollywood film (starring Will Smith and Blythe Danner) to a parlor game (centering on actor Kevin Bacon and found at <http://www.baongame.com>). But the concept has its roots in wireless technology. Marconi, in explaining the value of radio, predicted that his "wireless" would make it possible to find anyone on the planet by connecting through "5.83 people."

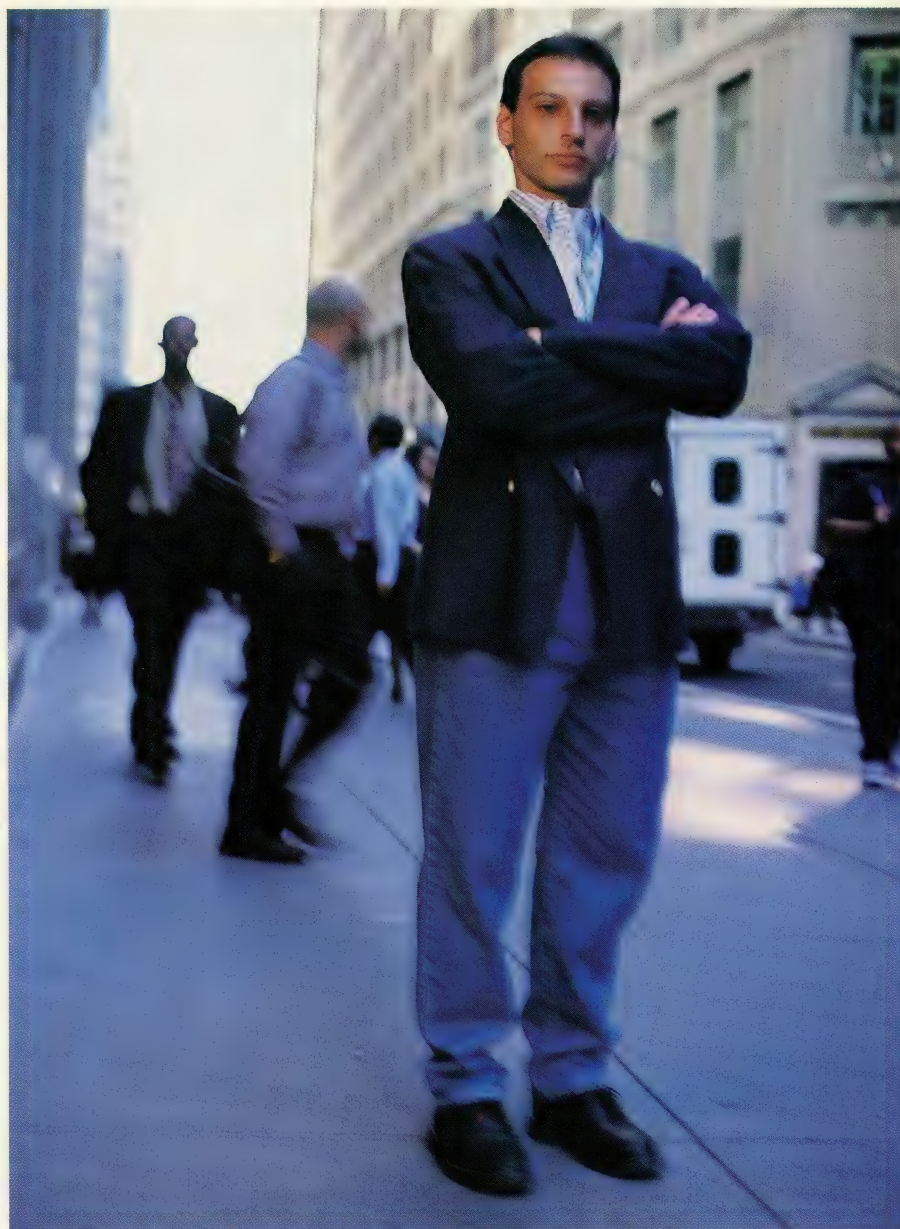
Andrew Weinreich is picking up where Marconi left off. Now that individuals can connect with each other through a Web site, he wants to be the matchmaker for anyone looking to make a connection.

Sixdegrees, the Web site, is building a database of individuals who want to network with others. Everyone who registers supplies essential facts about themselves, in the hope of finding others who either share their interests or know someone else who does.

"When you come to our site, it's to your advantage to tell us not just that you're a lawyer, but an environmental lawyer. It helps you network better," Weinreich explains. Once the database is large enough, sixdegrees members should be able to find professional and personal contacts from the database. "Who do I know that knows a lawyer in New York? Who do I know that knows a pediatrician in Virginia? Who do I know that plays golf?"

Weinreich practices what he preaches. He built the company by first learning

Cutting through crowds: Andrew Weinreich combined a Web site and a database to build his free referral business.



Behind the Scenes

the business of technology as an in-house counsel for Hertz Computer in New York. After seeing the company through its public offering in 1995, he approached a friend who knew something about off-beat marketing, Shoshana Zilberberg, a public relations executive working for Snapple. She agreed to leave her job only if Weinreich raised \$25,000. He didn't have to work his Rolodex long to get the seed money and Zilberberg's commitment. As Zilberberg built the team, Weinreich raised almost a million dollars from a wider circle.

While sixdegrees is open to the public, to join the network you must list two people you know and their e-mail addresses. Those people are asked to confirm the relationship before the first member is registered in the database. In its first six months, the site has collected over 400,000 names; close to a third are confirmed members.

The site launched on two HP Net SeverPros with 200MHz Pentium Pro

processors and 192MB RAM. The software used is Windows NT 4.0, MS SQL Server 6.5, MS Visual Basic, O'Reilly's WebSite Professional, and Cold Fusion. Within months, a Compaq 5000 with four 200MHz Pentium Pro processors and 256MB RAM was added; before long, additional processors, RAM, and disk space were added to each of the HP NetServer Pros.

Sixdegrees hopes to build a revenue stream from banner advertising. Since only members can query the database, it believes it offers advertisers the advantage of targeting their ads.

"When the *Times* is printed, everyone who looks at page D4 sees exactly the same page. But if you go to Yahoo and search for 'automobile' you'll get an advertisement from Ford. If you type in 'computer' you'll get an advertisement from Apple," Weinreich explains. "The thing we have that will make this model work better than other sites is that we know who you are."

Licensing should prove to be another money maker. "It's very important that there be only one database, but the entry point can be from anywhere. We could offer the sixdegrees front end co-branded with a search engine or a magazine, for example. So people could register with sixdegrees directly from Yahoo, for instance, and it would populate our database.

"As long as we maintain ownership of the database, we can have GUIs [graphical user interfaces] anywhere on the Web. We provide the database and we share the revenues."

The final target is the intranet. The company hopes to market an application that companies can use internally, to check references, discover new vendors, or do social networking within the company.

Weinreich says. "Now the burden is on us to create services so people can take advantage of the data." (<http://www.sixdegrees.com>) —Hilary Marsh

Getting Ready for E-Commerce in Medical Care

When doctors are ready to talk with patients online, VHA will be ready.

In the 20 years since it was founded as Voluntary Hospitals of America, VHA Inc., of Irving, Texas, has become a colossus in the health-care industry. The 1,500-member cooperative represents nearly a quarter of the nation's community hospitals, providing services ranging from the mundane (group purchasing of supplies) to the essential (clinical care training).

VHA hospitals serve 26 percent of all Americans needing hospital care. They spend more than \$8.3 billion annually on medical supplies and services.

Building a structure for electronic commerce that will last is not an overnight job. "We did a tremendous amount of work, taking the basic idea and validating it," said James Burgess, vice president of information

technology solutions. The cooperative surveyed members to uncover needs and then followed up with focus groups. "Once we were able to formulate the

needs, we could pinpoint the requirements of physicians and nurses."

The solution was to create an extranet, linking each members' private intranet to improve internal business operations while making health-care information available to the public through an open portion of VHA's Web site.

The extranet, called VHAcure.net, allows VHA to exchange data with its 25 regional offices, hospital members, doctors, and business partners, while allowing them to communicate with each other over the same exclusive TCP/IP network.

"We're planning for a future where we have the ability to reach business partners and order their supplies through the network," said Mike Cummins, vice president and manager of information systems at VHA.



Mike Cummins sees VHA's extranet as the first step in a long-range plan to open up the lines of communication between hospitals and the communities they serve.

To accomplish that while being prepared for future expansion, VHA turned to IBM and its Global Services division both to maintain the extranet and design Web pages for member hospitals that haven't yet built their own sites. IBM did the network design and much of the installation at the hospitals, testing routers, laying cable, and configuring DSUs.

The extranet is hosted by Compaq and IBM servers running Microsoft NT and Unix platforms, while intranet Web applications use Lotus Notes and Domino. Discussion forums are run mainly on Proxicom software, with some forums hosted on Notes.

Members pay an annual service fee, and industry vendors are charged to participate in online forums. VHA invested \$25 million, including \$17.5 million to help members pay for VHAsCURE.net access for the first year. So far, more than 200 hospitals with 7,000 users have joined the network, which opened in August.

The content includes a good deal of confidential data that would have required either visiting a hospital office or establishing a series of direct connections with unique online databases for every specific bit of information. Now hospital administrators and physicians can see medical records, scheduling information, and other material with a browser or Notes applications.

Employers and suppliers have access to acute care centers, clinics, and individual physician practices, while consumers gain access through the public portion of the site to physician offices, pharmacies, and insurance information, while health-care providers and insurers monitor and manage the information.

Another essential function is to bring member hospitals and doctors closer together through live forums on topics like managed-care strategy, new heart surgery techniques, effective patient relations, and day-to-day issues like gift shop operations.

"We want to set up online affinity groups for administrators and doctors to share information with each other," Cummins explained. "Travel keeps the groups small, but with electronic communication, geography is not a factor. Groups can be larger and impact more people."

The company hopes to start the next phase before long: "solving problems in the doctor's office," including online authorization for patient treatment. Since many of the cooperative's business partners are already on IBM's Advantis network, most of the pieces are now in place. (<http://www.vha.com>)

—James Evans

A Community for Couch Potatoes

While everyone talks about convergence, ChatTV delivers.

Craig Moncreiff could have sat back to enjoy a life of leisure after he sold his financial management software company, ValuSource, to John Wiley & Sons in 1994. But the San Diego, Calif., programmer had too much

trade comments with fellow fans, if they knew where they could find each other.

Moncreiff's invention, ChatTV, is the nation's first chat service providing viewers with dedicated chatrooms for discussing programs during, before, and after the broadcast. Other chat sites, like TalkCity,



Craig Moncreiff believes couch potatoes will chat with other viewers while they watch TV.

entrepreneurial spirit to retire. He was drawn to the Internet, but didn't have any particular ideas in mind. At least not until he became intrigued by the way his friends were discussing the Fox TV show *Beverly Hills 90210* in America Online chatrooms. A regular group convened after each show had aired to gossip about the episode. Before long, Moncreiff was convinced there must be millions of others who would jump at the chance to

have chatrooms where people talk about TV, but ChatTV is taking several steps to service only TV viewers. It runs rooms that are dedicated to TV networks.

"We've made sure, by automating TV schedules around the country, that people who are watching specific shows can get into the appropriate room," said Moncreiff, who is now the president of Interactive Broadcaster Services Corp. "The trick is to automate the differences in time zones."

Behind the Scenes

That means when a viewer arrives at the ChatTV Web site, the site automatically recognizes the viewer's time zone and adjusts the television schedule; an East Coast viewer sees a different schedule from someone logging in from the West Coast.

It's a simple concept, but it could have been a programming nightmare. The pages must be dynamically generated for each user since the number of HTML tables and graphics required could have overwhelmed a conventional storage system. And each user's profile needs to link to a TV schedule customized to their area every time they enter. Then, once a user chooses a program, he or she is switched to a chatroom created just for that show.

"The last thing we wanted to do is write custom CGI scripts," explains Tim Ash, president of Future Focus in San Diego, Calif., the design firm that manages the technical development. Instead, Future Focus uses Informix's Web DataBlade technology and Universal Server to generate HTML pages, comparing user input with a choice of objects

stored in a database. "We had to integrate chat with a database, a Web application, and a daily data feed. This type of application had not been built yet."

Ash is convinced that the DataBlade module dramatically reduced the amount of programming work that will be needed to maintain the application over time. "All of the rules are part of the database, so it becomes the nerve center of your application." In essence, the Web site is one big database linking users, schedules, and chatrooms.

The chat software comes from ichat Inc., and the server hardware is a set of Sun Sparc Ultrastations, running the Sun Solaris operating system with Netscape Enterprise Server handling the HTTP services. Ash believes that by using Informix's DataBlade modules his work will also be simpler in the next phase of development: displaying ads targeted only at specific chatrooms and users.

The site is just getting off the ground, but the early signs are promising. When ChatTV was presented at last spring's National Association of Television Program

Executives in New Orleans, the reception was electrifying. "We were mobbed," Moncreiff said. "The producers were really excited."

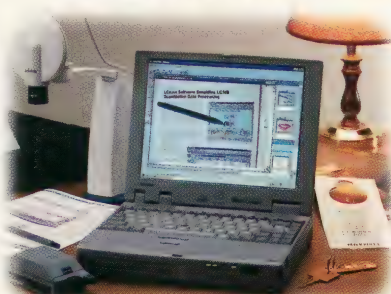
The business model is a hybrid between television and the Internet. Revenue will be generated from advertising, but the service is free to chatters. ChatTV sells its own ads nationally but it's also hoping to build relationships with local stations so that the stations will drive traffic to the site in exchange for ad revenue from the site. ChatTV offers local stations the opportunity to sell ads on the site, if the station promotes ChatTV on the air. ChatTV will also market event rooms for special guests to meet viewers after a show is broadcast.

"We only need one of every 1,800 households to sign on once a day to make this a big hit," Montcrieff explains. "There are 98 million homes in the U.S. that watch an average of seven hours of TV a day. That's 1.4 billion hours of television watched a day." All Montcrieff has to do is convince them to chat while they watch. (<http://www.chattv.com>) —James Evans

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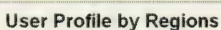


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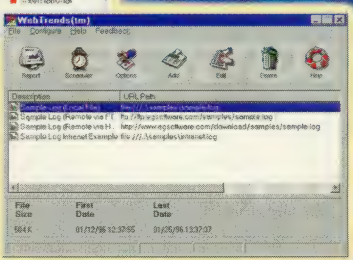
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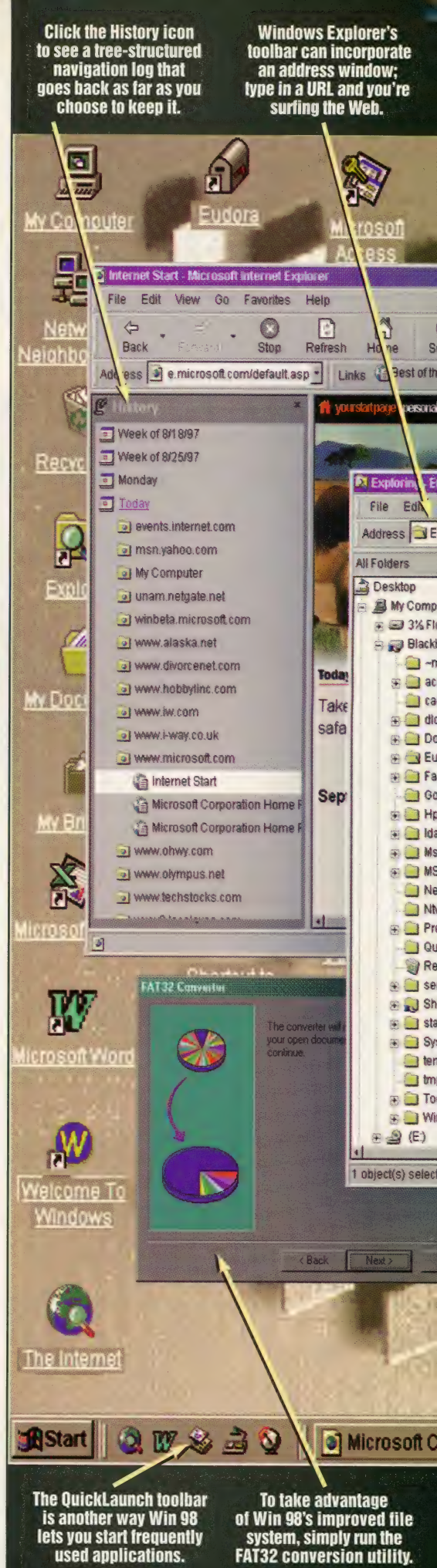


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With Windows 98, Microsoft delivers the first half of its plan to "embrace and extend" Net standards. But does it enhance the Net enough to matter?

WINDOWS 98 embraces the Web

by Gerry Blackwell **T**HE MOST REMARKABLE THING ABOUT WINDOWS 98, MICROSOFT'S SUCCESSOR TO WINDOWS 95 (FORMERLY CODE-NAMED MEMPHIS AND NOW SCHEDULED FOR DELIVERY SOMETIME EARLY IN 1998), IS THE WAY IT INTEGRATES FUNCTIONS, FEATURES, AND THE VERY INTERFACE OF MICROSOFT'S LATEST WEB BROWSER, INTERNET EXPLORER 4.0 (IE4). IF YOU'VE SEEN THE BETA VERSION OF IE4 (AVAILABLE AT THE TIME OF THIS WRITING AS A FREE DOWNLOAD), YOU'VE SEEN THE MOST VISIBLE CHANGES WINDOWS 98 WILL BRING. THIS IS NOT SIMPLY A MATTER OF MICROSOFT BUNDLING IE4 WITH THE NEW OPERATING SYSTEM AS A UTILITY. THE IE4 "DESKTOP" WITH ITS SINGLE-CLICK ACTIVATION OF PROGRAM AND OTHER OBJECT ICONS, "EXTENSIBLE" TOOLBARS, AND ACTIVE X AND HTML PAGE ELEMENTS SERVES AS THE DEFAULT SHELL FOR WINDOWS 98, MAKING WEB-STYLE BROWSING THE CENTRAL METAPHOR OF PERSONAL COMPUTING. AT THE SIMPLEST LEVEL, WHEN YOU CHOOSE FAVORITES FROM THE START MENU, YOU'LL NOW FIND A MIX OF REMOTE OBJECTS, SUCH AS WEB SITES, AND LOCAL ONES, SUCH AS DOCUMENT FILES. BUT IT GOES MUCH DEEPER.



Click the History icon to see a tree-structured navigation log that goes back as far as you choose to keep it.

Windows Explorer's toolbar can incorporate an address window; type in a URL and you're surfing the Web.

The QuickLaunch toolbar is another way Win 98 lets you start frequently used applications.

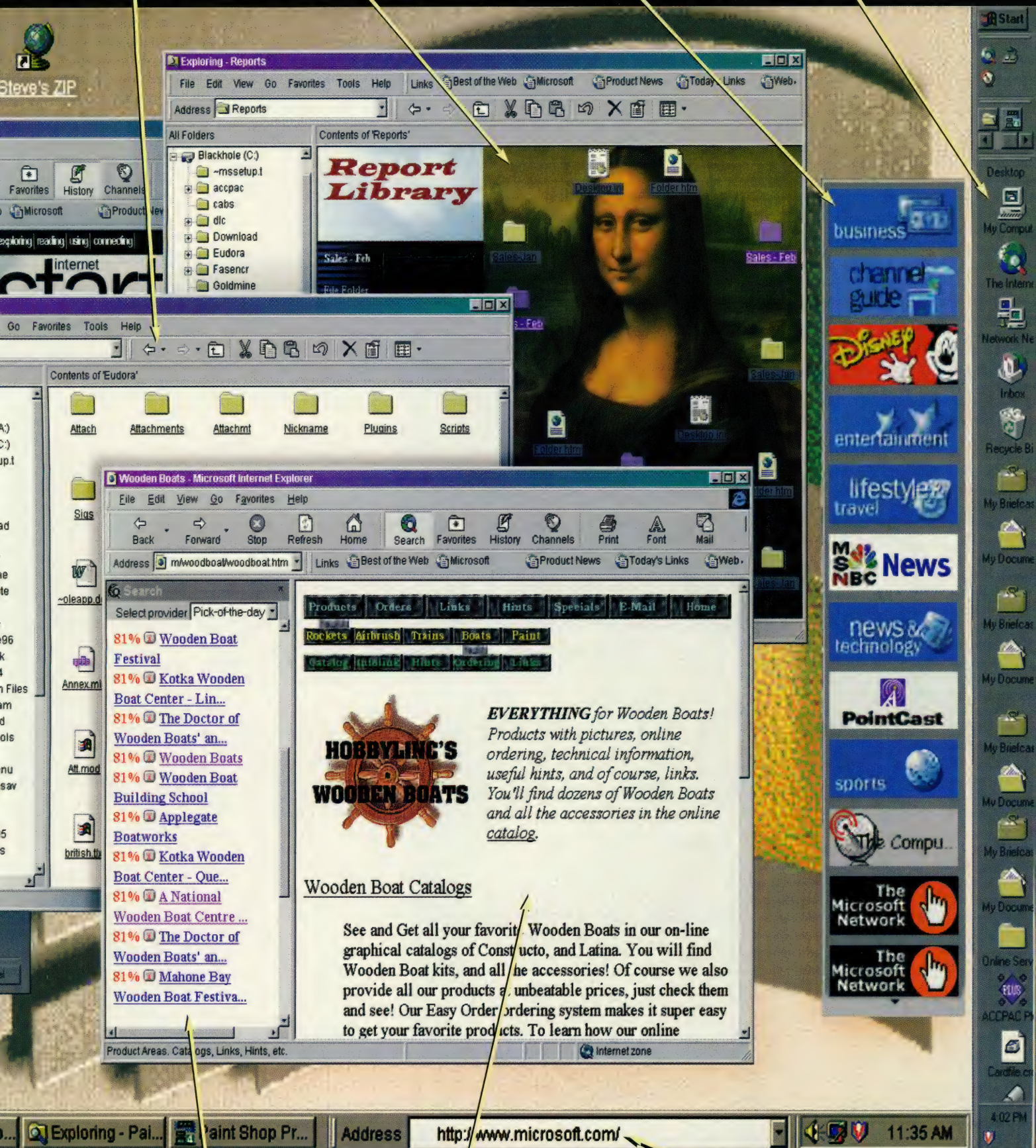
To take advantage of Win 98's improved file system, simply run the FAT32 conversion utility.

Forward and Back buttons—another browserlike feature—now share the toolbar with the other file-management and navigation icons.

You can customize folder views, like this one, with graphical backgrounds, titles, and other HTML-based text materials—especially useful in a corporate setting.

This selector bar for Win 98's new Channels feature is an ActiveX control that you can leave running on the active desktop if you desire.

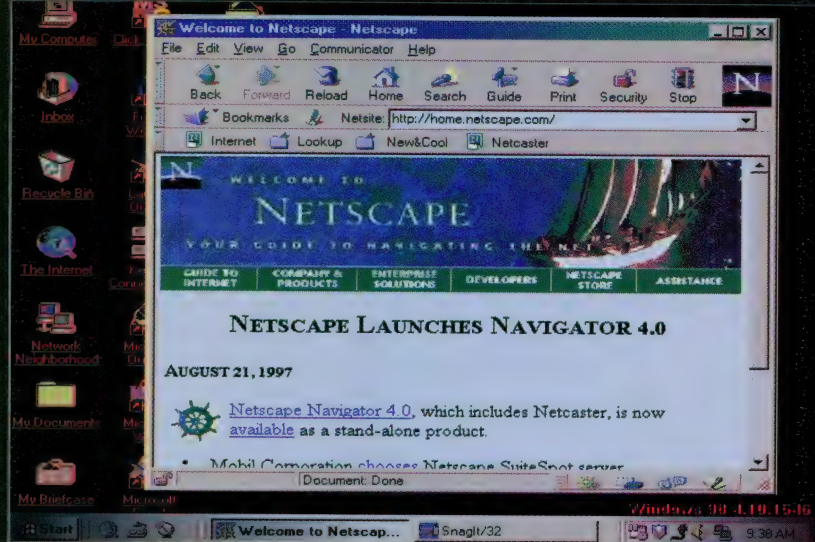
Windows 98's taskbar optionally can be moved to the side of the screen and, if you want, can have buttons for all your desktop items.



Internet Explorer 4.0's Search button takes you directly to a Web search page, which it displays in a separate frame.

As you click links to sites in the results list, they're displayed in the main browser frame, making it easy to explore the list.

"Address windows everywhere" might be a slogan for Win 98: To add one to the main taskbar, simply right-click and select that option.



NETSCAPE COMMUNICATOR+WIN 98: STRANGE BEDFELLOWS?

As the browser and propaganda wars between Netscape and Microsoft intensify, each side would like to convince you not only that its offerings are superior, but that by choosing the competing product, you'll be sidelining yourself in the great march of technology. Microsoft, in particular, would like you to believe that since Internet Explorer is so intertwined with Windows 98, you'll be at a big disadvantage using "outside" tools like Netscape Communicator.

After testing Netscape Communicator 4.02 running under Beta release 2 of Windows 98, we concluded that Microsoft may be strongly overstating its case: We found no incompatibilities between Netscape Communicator and Windows 98; there doesn't appear to be any technical reason why the two can't happily coexist. You simply set up Communicator and Messenger to be the default browser and e-mail tools just as you would under Windows 95 or Windows NT 4.0. And, frankly, we find some Netscape components to be just plain better than Microsoft's offerings. For instance, Netscape Composer is a much stronger HTML editor than Microsoft's FrontPad.

The only area where we discovered significant conflicts between Communicator and Win 98 is in channel technology, where Microsoft and Netscape take divergent approaches. Microsoft has embraced the Channel Definition Format (CDF), which allows a wide range of push-technology-based services (such as those offered by MSNBC, Quicken, Forbes, Disney, PointCast, The New York Times, and ESPN) to be viewed in four different ways: full-screen (in Win 98's Active Desktop), as a screensaver, as a desktop item (like a small sports ticker), or as mail directly delivered to Outlook Express (IE's e-mail component). Netscape chose to incorporate Marimba technology into Netcaster and use a more ubiquitous HTML format to deliver updates. Of the two, Internet Explorer seems to work better: Active Desktop technology is faster, and CDF has attracted support from a much wider range of push content providers. Due to memory and resource requirements, you really can't use Netcaster and IE Active Channel technology simultaneously, so you may need to pick one of the two if channel content is an important feature for you.

So, is mixing Windows 98 and Netscape Communicator a bad idea? Our Labs testing didn't reveal any problems. Choosing between Communicator and Internet Explorer can be a tough decision, since both have strengths and weaknesses. But in our view—with the possible exception of channels—the integration of Internet Explorer and Windows 98 isn't as compelling an advantage as Microsoft would have you think. You can use whichever browser you prefer, without fear of problems.

—Kevin Reichard

To users who have continuous Internet access and for whom the Web or private intranet is a transparent extension to their computer or LAN, this is a logical and probably a welcome evolution. But users dependent on dial-up access, for whom Web browsing is still an occasional and distinct activity, may find the intrusion of browser functions distracting.

Windows 98 will also include IE4's built-in "push" features as well as a powerful suite of Internet tools that includes an excellent mail client, Outlook Express (reviewed in this month's IW Labs, "E-Mail Reinvents Itself," p. 80), and a basic WYSIWYG HTML editor, FrontPad.

There are some non-IE4 Net-related innovations, too, as well as some significant, but not earth-shattering, changes that have nothing to do with the Net. We'll look at these a bit later.

Windows 98 looks by and large to be a solid, if unspectacular, step forward for personal computing. We say this even though the Beta version used in review was so unstable it made evaluating some features difficult.

THE NEW INTERFACE

Single Click: Of the principal interface changes—all present in IE4—the most striking is single-click activation of file and program icons on the desktop and in file lists. It's *so* much easier; why didn't Microsoft do this in the first place?

On the other hand, it takes some getting used to. In the new single-click world, to select an object, rather than clicking on it (as in previous Windows versions), you simply pass the mouse cursor over the item. This is quick and easy, of course, but it's also all-too easy to inadvertently unselect by jogging the mouse. We found selecting more than one item in a file list especially tricky.

Browser Views: Folder views can now look like Web pages and function as browsers. And they all have IE4-style toolbars that are context-sensitive. If you're searching in Windows Explorer for files on your local system, you see toolbar buttons such as Cut, Copy, Paste, Delete, and so on. When you switch to Internet mode (by clicking the new Internet icon in the Desktop hierarchy in Windows Explorer, or entering a Web address in the toolbar Address window), they change to standard IE4 navigation buttons such as Back, Forward, and

Home. And the folder, in effect, turns into a browser.

You can also add HTML elements to a folder view by right-clicking in the folder and selecting "Customize this folder..." from the pop-up menu. A wizard lets you choose a background graphic and/or opens your default HTML editor where you can add text and graphic objects—titles and help text to guide end users, for example.

Active Desktop: The Windows 98 desktop, now called the Active Desktop, can include Web-driven ActiveX controls as well as standard Windows shortcuts. For example, Beta 1 came with a control

automatically minimizes or restores all open programs. You can also create custom toolbars based on the contents of a folder.

To do this, you might, for example, create a new folder and populate it with shortcuts to frequently used programs. (In the Windows 98 Beta, though, these custom deskbands always displayed icon plus file name and, as a result, took up too much room.) You can adjust the length of any deskband or toolbar section: If it's too short to display all the icons it contains, scrolling arrows appear. Still better would be an option to display icons only.

F*or those with continuous Net access, Windows' new interface is a logical and welcome evolution. Dial-up users, for whom Web browsing is still an occasional and distinct activity, may find it intrusive and distracting.*

that displays updated headlines from the CNet technology Web-zine. You could also have a continually updated stock market ticker tape running on your desktop—only useful, of course, if you have continuous access to the Net.

The Taskbar: The main row of control buttons in Windows 98 can now display additional toolbars or "deskbands"—similar to the current system tray with its tiny icons for main system functions. One default deskband has a window in which you can type an address for instant access to a file or Web site. Another has shortcuts to everything on your desktop.

The QuickLaunch toolbar, the only one I kept active, has icons for Internet Explorer, Outlook Express (the mail client), and channels (the push feature)—plus a very useful toggle button that

BETTER BROWSING?

As mentioned, all the latest features of the highly polished IE4 will be incorporated into Win 98. Here's a rundown.

Convenience: The interface now includes drop-down history lists attached to both the Back and Forward toolbar buttons, so you can move directly to a particular page instead of retracing all intermediate steps. When you start to enter a URL in the Address window, IE's AutoComplete feature fills in the rest from the history list if it can. Both are small but useful refinements.

Clicking toolbar buttons for History, Search, or Favorites displays a frame to the left of the browser window providing enhanced access to these features. The Favorites frame presents a folder hierarchy view that lets you keep multiple

folders open. The History bar shows a hierarchy view with folders for each day and week, going back as far as you want. The Search button launches a similar frame on the left side of the browser window—with a search page running in it. Results of searches are displayed in this frame. When you click on a Web address in the results list, the main browser window displays the page, and the search list remains in view. This saves repeated backtracking to a search page.

Advanced Technologies: IE4 includes support for many of the latest Web technologies, including ActiveX (of course) and Dynamic HTML. Microsoft

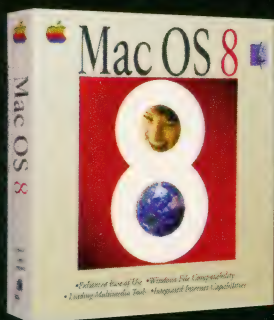
DHTML, one of two competing standards, lets developers create pages that change dynamically in response to user actions without having to go back to the server for data.

This, for example, lets authors design slick transitions with changing colors or dissolving text. The best example at Microsoft's DHTML site (<http://www.microsoft.com/ie/ie40/features/?/ie/ie40/features/ie-dhtml.htm>) is a table with figures. Clicking on a column head dynamically re-sorts the data, just like re-sorting a

spreadsheet or word-processor table.

Security: The long list of Net security technologies supported includes Microsoft's own Authenticode, which certifies that a downloaded program or ActiveX control hasn't been tampered with. The warnings and certificates certainly appeared in IE4 and the Win 98 beta when we downloaded code—and we didn't pick up any viruses to our knowledge.

Microsoft Wallet is a utility that lets you store private information such as credit card and ATM card numbers and e-cash in a secure, easily accessible form so it's available when you go shopping on the Web. No more digging out your physical wallet to check the card number. (For more on Web payment systems, see "Click Here to Pay," p. 60, Sept. *IW*.)

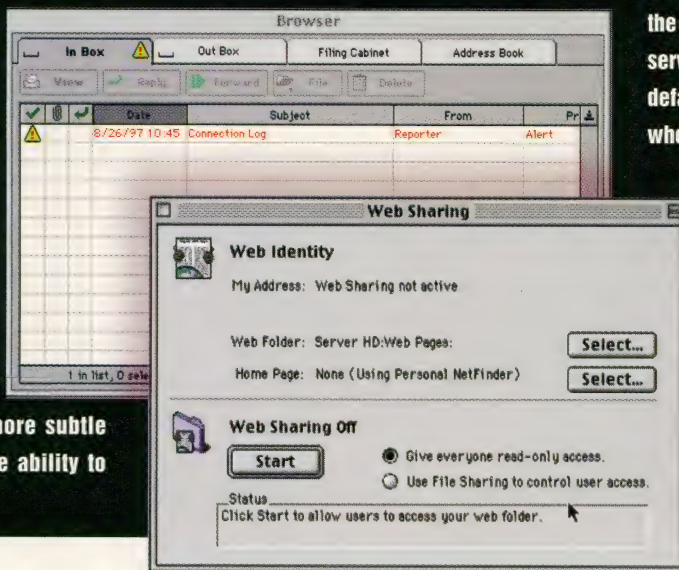


APPLE'S NEW CORE IS NET-FRIENDLY

Macintosh users pining for better Net

access will find Apple has developed a much clearer picture of the Internet with the just-released Mac OS 8. Mac OS 8 adds key features such as a built-in mail client, a choice of Microsoft's Internet Explorer 3.0.1 or Netscape Navigator 3.1 (Netscape is the default browser here, but that will change in the wake of Microsoft's recent deal with Apple), a built-in Web server, and improved PPP connectivity for dial-up access to Internet service providers. The result: Macintosh computers are much more Internet-enabled right out of the box than ever before, making Internet access no more difficult than a few clicks on the proper pull-down menu.

One of the hottest aspects of the new OS is its built-in Java Virtual Machine, which allows networked Macintosh users to run Java applets from the desktop without having to launch a Web browser. This gives Java programs the same easy desktop-launch capabilities as traditional Mac applications, blurring the line separating remote applications from local ones. Other, more subtle improvements abound, such as the ability to



connect to a Web site directly from the Apple menu or by clicking a URL on your desktop.

OS 8 also comes with everything you need to keep your Mac connected while on the road, including Open Transport/PPP for dialing into TCP/IP networks and Apple's Remote Access client for connecting to AppleTalk-based Macintosh networks.

The Web-server software is designed primarily for peer-to-peer document sharing rather than as a high-performance server engine. Setting it up is remarkably easy: Simply select the directory you'd like to share and turn on the server. Access can be granted to everyone (the default setting), or it can be restricted to those who already have access to the computer using Macintosh file sharing.

Other inclusions that add to OS 8's effectiveness as an Internet surfing engine are PointCast Network for streaming newsfeeds, Marimba's Castanet Tuner 1.0 for automated information delivery, and Stuffit Expander for uncompressing archive files downloaded off the Net. —Sean Fulton

WEBCASTING

Win 98's built-in push capability is one of the new operating system's (and IE4's) most attractive features. It works similarly to PointCast and other third-party push programs.

You subscribe to a Web page, establishing it as a "channel" on your desktop. IE checks the site regularly (if you have continuous Net access) or whenever you tell it to (if you dial up) and delivers new information automatically.

You can choose in the channel setup to have pages automatically downloaded for viewing offline. Windows 98 will alert you when the site has been updated by changing its channel icon, or sending you an e-mail.

As with PointCast and other push programs, the latest information from

subscribed channels appears in a cycling screensaver display.

Most of our attempts to subscribe even to the ready-made channels offered in the IE channel directory caused unrecoverable faults that prematurely shut down IE. We're assured this is due to bugs that will be fixed before Win 98 begins shipping.

NET TOOLS

Windows 98 will bundle the same suite of Net-based applets currently shipping with IE4. Their edge over similar tools from third-party suppliers has less to do with functional superiority than the fact they're tightly integrated with other Win 98 components and use a similar interface.

Outlook Express: This is a slick e-mail client that will serve many users'

needs quite well. Microsoft makes it very easy to migrate from your current client; Outlook Express automatically imports mail folders and address books from Netscape Mail and others. It supports HTML, so messages can include URLs, horizontal rules, and images—no guarantee the recipient will see it the way you send it, of course.

Outlook Express also supports digital signatures, encryption, and the Lightweight Directory Access Protocol (LDAP), which lets you search for e-mail addresses at Web-based white pages sites from within the address book without opening a browser. Very cool.

Also, you can easily set up the program to check multiple mailboxes and consolidate messages—although this feature

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Why is it so hard to get a site up and running?

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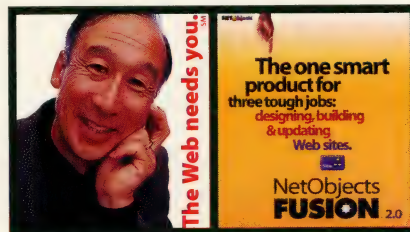
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didn't always work flawlessly with our Beta version.

FrontPad: This low-end, easy-to-use WYSIWYG HTML editor is based on Microsoft FrontPage. It won't take you very far down the road of Web-site authoring and design, but the trip there will be pleasant enough. The main limitation: As with similar editors, you can't count on precise placement of graphic and text objects.

More: NetMeeting, which was available with IE3, lets you do what other voice/video/data conferencing tools from companies such as VDOnet Corp. and White Pine Software (CU-SeeMe) do—set up private conferences over the Net or call strangers logged on to a public conference server. NetChat is a chatroom tool of minimal interest to business users.

OTHER NET ENHANCEMENTS

Multilink: Win 98's most notable non-IE4 Net-related innovation is support for Multilink Channel Aggregation.

It lets you combine physical channels to increase bandwidth. Two lines with 56K modems would produce one 128K channel suitable for videoconferencing, for example. But it only works if you have a compatible server (such as NT 4.0) at the other end—which we didn't have during testing. Microsoft says a few ISPs are offering Multilink service now and more are interested in offering it.

Tunneling: Win 98's Dial-up Networking facility will support Point-to-Point

Tunneling Protocol (PPTP). It lets you set up secure, encrypted links between corporate networks over the Internet, saving on long-distance charges for employees working off-site or from the road. Again, we weren't able to test this facility.

THE NET AIN'T ALL

Windows 98 is mainly about the Net, but there are some other significant changes, mostly under the hood.

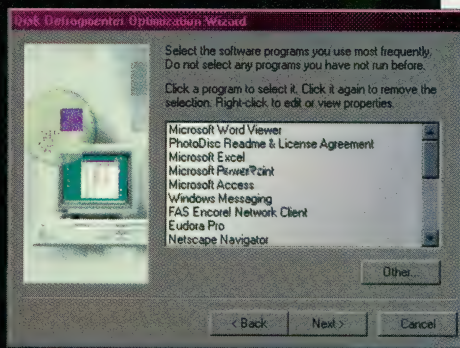
WHY WINDOWS 98 IS BETTER

So many of the changes in Windows 98 are about ease of use, both on the Internet and for desktop chores, that it's easy to forget the role of any operating system is to make our computers run more efficiently. The real reason PC users will want to upgrade to Win 98 is to gain better overall system performance. Here are the two main improvements.



FAT GETS FATTER One of Windows 95's big steps forward was the addition of long file names. However, Win 95 needed to retain compatibility with the old FAT (file allocation table) system that was part of the basic design of DOS. Win 98 introduces an improved version called FAT32. While it falls short of industrial-strength 32-bit file systems like NTFS and HPFS, it confers welcome benefits while retaining DOS compatibility: First, it allows formatting of single volumes of more than 64 terabytes (the limit under FAT was 2GB). Second, by reducing cluster size, it cuts the waste of disk space endemic to any disk operating system. In the old FAT system, drives of 1GB or greater were formatted with clusters of 32K; with FAT32,

cluster size for drives of up to 8GB is a dramatically smaller 4K. One caveat: As of now, to gain the benefits of FAT32, you must run a one-time, irreversible conversion. Third-party reconversion utilities may become available. **NO MORE DEFRAG DRAG** Defragmenting or "optimizing" of hard disks has been a routine PC maintenance chore for years. It's needed because files are stored non-contiguously (in multiple chunks linked by pointers); Windows writes data in the first open cluster on the disk, then moves to the next open cluster. When old files are erased, empty clusters are filled in with pieces of newer files. Before long, new files are scattered all over the disk, increasing the time needed to open these files. Defragmenting reunites the pieces of files, speeding up disk performance. Windows 98 delivers a Disk Defragmenter Optimization Wizard that not only manages the general process of defragging, but further optimizes performance by physically locating files associated with particular application programs close to those applications.—*Ted Stevenson*



FAT32: Operating system support for a 32-bit File Allocation Table file system eliminates problems formatting large hard drives and will result in more efficient use of storage space.

Multidisplay: If you have two video cards in your computer, you can connect two monitors and have them running simultaneously, at different color and pixel resolutions if you want and displaying different parts of the desktop.

Defragmenting: A new defrag utility tracks program usage and ensures frequently-used programs are stored in contiguous disk space to improve performance.

New and Future Technologies: Win 98 provides native support for many new hardware technologies including Advanced Graphics Port (AGP) MMX, DVD, Universal Serial Bus (USB), and IEEE 1394 device bus.

Windows 98 will not be for everyone, especially those who don't use the Internet a lot—even though it's possible to turn off some of the most

obtrusive browser-related features.

It will also fuel controversy over Microsoft's use of its dominant position in the OS market to hammer application software competitors—especially, of course, Netscape. But for most users, the inclusion of more tools has to be a plus. ■

Gerry Blackwell, a frequent contributor to Internet World, writes about computers and communications from London, Ontario.

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Taking Stock

BY SEAN FULTON

OF YOUR WEB-SERVER SOFTWARE

A Web server connected to the Internet has been called the printing press of the digital age. Of course, anyone who has spent time in publishing will tell you that the printing press itself is just a small—and yet highly visible—part of a large, complex set of systems and workflow processes.

Developers of Web-server software have taken this deeper meaning to heart. They are rapidly improving upon what was once merely a software engine to push text and graphics across the world at high speeds, adding content creation and management tools that make the process of publishing information more organized and efficient.

What's more, because the information we publish over the Web has gone beyond simple text and graphics to include new media such as streaming

video and audio, and because the Web allows businesses to interact with millions of new customers each day, the tools that served us well even a few months ago are rapidly becoming obsolete. The result is that today's high-performance Web servers need to do more than simply publish content: They need to help creators create it, and they need to help users use it. The question for your company is no longer whether you should upgrade your Web-server software, but rather which of the new crop of packages is best for your business's needs.

Netscape, Microsoft, O'Reilly & Associates, and at least a dozen smaller companies are helping to develop Web-server software that brings order to the all-too-frequent chaos of Web publishing—and simplifies the even braver new world of online commerce. The "big three" Web-server vendors command the

majority of market share and each has a devoted following among corporate users. The smaller vendors have some interesting products, but none has the clout enjoyed by the market leaders.

Even America Online has a Web-server product on the market. It may surprise some that we have included AOL's server, but this free alternative to Microsoft's Internet Information Server (IIS) and the freely available Apache Web server is gaining good feedback, especially on the super-critical mailing lists where Internet service providers (ISPs) compare notes.

All of the new Web servers are hoping to go beyond the simple server-as-distributor model, adding document-management tools, search tools, shopping-cart technology, and even Java applets that enable one-step, secure credit card transactions over the Internet. (An up-to-the-minute overview of Web-server software and other developing technologies is available at <http://serverwatch.internet.com>.)

This new breed of Web server has at its core the same type of robust content-pushing server engine found in Apache or in Web servers developed by the National Center for Supercomputing Applications (NCSA) or the World Wide Web Consortium (W3C). On top of this base feature set, commercial server vendors have layered modular applications that give the Web-site developer or administrator greater control over what goes into and what comes out of the Web site.

But does a Web server need all of these extra tools? Aren't there separate applications to perform these tasks?

The answer is yes on both counts. Unfortunately, the tools to handle these extra tasks have never been standardized,

and their integration with the base Web server requires a huge amount of time and tinkering by a skilled systems administrator or programmer.

So, for example, integrating a Web-based shopping cart to help users navigate an online database of products, prices, photos, and product descriptions has typically required the site designer to master the organization and macro language of a program like MiniVend, then sit down and figure out how to design the site in such a way that it was entertaining, lively, and informative.

Once all this was accomplished, the Web-site administrator still needs to

technology, developing ways to plug more and more content and navigational utilities into the Web-server engine without actually incorporating that functionality into the engine itself. These products are administered through text-based configuration files, and although they come with the building blocks from which to create administrative and content-creation utilities, those utilities are not part of the core server itself and thus are limited in their flexibility.

The Apache Web server perhaps best exemplifies this dilemma. Apache software is freely available over the Internet and runs on a wide variety of platforms, including Unix and Windows 95/NT.

Source code for the server is free, so Web-site administrators are able to modify the server to provide for greater speed or to hone the software for a specific type of application.

Apache supports all of the current Internet standards for Web-content distribution, including HTTP/1.1 and eXtended Server Side Includes (XSSI), which allows content developers to set environment variables in Web pages and use conditional HTML. The newest Apache version, 1.2, also supports a CGI debugging mode and improved logging capabilities for tracking visitors to a Web site.

Apache users who need to conduct secure business transactions generally turn to Stronghold 2.0, a version of Apache designed by C2Net Software to support secure Internet transactions using the Secure Sockets Layer (SSLv.3) standard. This server comes with basic tools to create and maintain certificates of authority (CA), and it supports 168-bit symmetric encryption for rock-solid security while transmitting sensitive or confidential information across the Internet. Unlike Apache, Stronghold is not free—it costs \$995—but it is still very much a bare-bones server system.

THE MODEL OF SERVER-AS-DISTRIBUTOR IS OBSOLETE.

maintain two server systems as well as associated access lists and configuration files—one for the MiniVend server and one for the Web server itself.

This system isn't feasible in the real world where programmers are seldom proficient at Web-site design and designers are rarely adept at the sort of high-level programming that makes a Web site interactive and appealing. It would be hard enough to accomplish this marriage of skills, but given the shortage of time available for learning in today's get-it-done-yesterday global marketplace, it's clear that a leading-edge site requires configuration tools that don't require programming.

The Web servers available directly from the NCSA and the W3C exacerbate the problem by focusing on core server

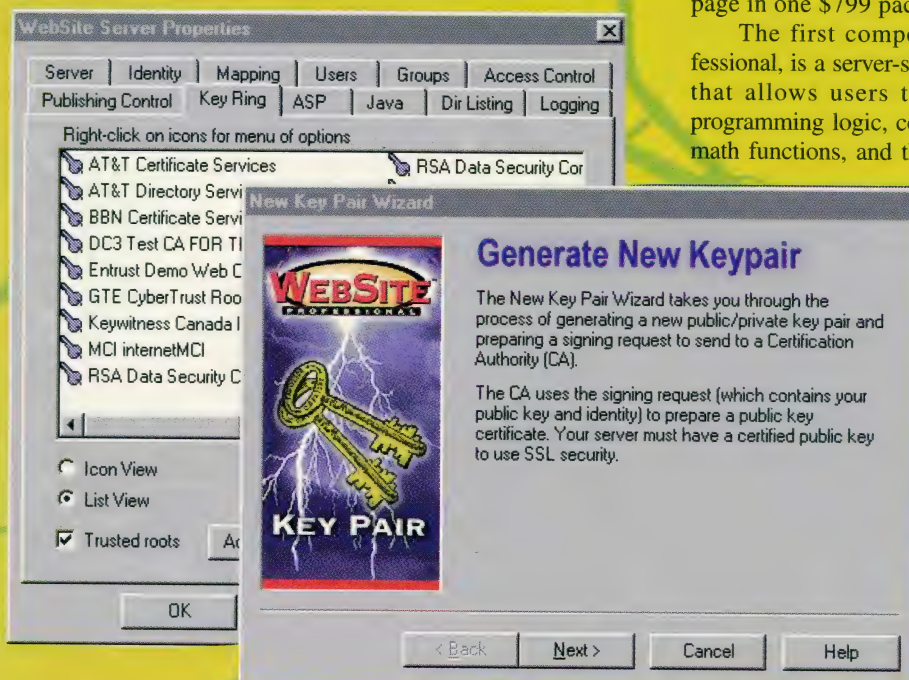
But despite its speed and range of capabilities, Apache is still a programmer's tool. The server includes all of the core security modules for limiting, controlling, and logging access to the Web site that the popular Netscape and Microsoft servers do, as well as tools to implement copy-flow and other publishing functions. But these features are not automatically set up when the software is installed, and administering Apache is time-consuming for anyone not experienced with it and enormously painful for someone inheriting a server that has been expanded from the core module with extra services.

Businesses looking to move forward on the Web need greater ease of use and better integration from their Web server, and the new breed of software suites offers a better fit between back-end functionality and point-and-click, Java-based, or browser-enabled applications. Some packages, like Netscape's Enterprise Server and Microsoft's IIS, go further still, providing capabilities for streaming audio and video content as a plug-in to the traditional HTTP server. (Audio/video functionality has not yet been integrated into the new Web servers because there is so little standardization among broadcast technologies. It is far simpler for the user to download a plug-in or helper application and have the browser automatically launch this extra application, which then communicates over a separate port or channel to the broadcasting component on the Web server itself.)

Netscape servers also automatically allow users to "publish" documents directly from the Web browser and come

with browser-based tools for establishing copy-flow rules and access permissions. And perhaps the hottest area of Web-server software development is in tools that provide a more stable and robust infrastructure for electronic commerce (see sidebar, "Polishing the Virtual Storefront").

Ease of use and secure commerce are the main selling points of O'Reilly & Associates' WebSite Professional 2.0, a well-tailored server package.



O'Reilly's WebSite Professional 2.0 server emphasizes secure commerce; the package lets you set up signed certificates and features storefront templates plus CyberCash support.

It provides seamless support for CyberCash secure credit card transactions over the Net and includes powerful management tools that are geared specifically

and management tool that makes developing and publishing interactive documents a simple point-and-click operation. To this, O'Reilly has added iHTML Professional and iHTML Merchant, two development environments geared specifically toward building content-rich Web sites and making it easy for the Web-site visitor to navigate that content and make purchases. The bundling gives the site developer all of the tools required to build and maintain a commercial Web page in one \$799 package.

The first component, iHTML Professional, is a server-side scripting platform that allows users to add to a Web site programming logic, conditional statements, math functions, and the ability to manipulate files on the server. The second component, iHTML Merchant, is a server front-end that provides graphical support for building multiple virtual storefronts on a single machine, using "turnkey" storefront templates.

All of the features in iHTML Merchant, including the ability to rotate banner ads through the site and generate dynamic sales re-

ports, can be set up and administered through a Web browser, making the creation of a virtual storefront a straightforward operation for even nontechnical users.

Both iHTML products are designed to run on Windows NT, and both use Microsoft's Active Server Pages, which allows for interactive, on-the-fly page creation using scripts. The server supports many HTTP 1.1 features, but O'Reilly does not claim the product fully supports the HTTP 1.1 standard.

Not content just to host pages through its own service, online giant America Online has a Web server, AOL-Server 2.1, that provides many of the same features as Stronghold, but with better ease of use and a graphical configuration.

This SSL-capable Web server lets users publish and delete documents from the Web server using HTTP-compliant

BUSINESSES NEED WEB SERVERS WITH BETTER TOOL INTEGRATION.

for electronic commerce and Internet storefront development.

WebSite Professional comes bundled with HomeSite 2.5, a Web-content creation

Put and Delete commands, providing a higher level of integration between the creation and publishing aspects of the server.

The server software is capable enough, offering the ability to host virtual domains from a single server process and allowing the server to spin off separate processes to handle additional load. Database integration is entry-level, though, supporting a handful of lesser-known SQL environments.

The server is designed to plug seamlessly into AOL's Web-authoring tool, AOL Press, a WYSIWYG HTML editing program. With the two products, users can "save" documents in the authoring tool and have them automatically uploaded to the Web server for publishing.

Another interesting product is Novell Web Server 3.0, a good choice for organizations that are running a network using NDS (NetWare Directory Services). This Web server allows authentication both for access to and publication of Web documents, and it permits users on IPX networks to surf the Web using Microsoft Internet Explorer without a TCP/IP stack loaded on the network. This provides an ideal bridging environment between a Novell-based intranet and the Internet, allowing each side to use protocols and services that are already in place. Novell Web Server supports Java, CGI programs, SSL for secured transactions, and the Oracle 7 database.

Microsoft leverages its tight integration with Windows NT in Internet Information Server, which comes free with all Windows NT server systems. (See Reviews, p. 37, for an in-depth evaluation of the latest version, IIS 4.0.) The server is integrated into the core NT security system so that the Web document access and management tools used by the server can be controlled by the NT directory services for user management. This gives administrators the ability to control access to Web services as easily as they control the server system itself—and with the same tools.

There is also an IIS toolkit that allows both the server and NT to be administered remotely using a Web browser. This type of front-end "cleanup" is becoming more and more common among operating system vendors, including BSDI and SCO.

Some of the integration features found in IIS include full support for SSL 3.0 secure communications over the Internet, support

Polishing the Virtual Storefront

Tighter integration of e-commerce tools will ease merchant-site maintenance.

The area of Web-server software development that is expected to grow most quickly in the coming months is tools that provide a better infrastructure for electronic commerce.

Support for secured communications over the Internet using the Secure Sockets Layer (SSL) is becoming common in virtually all commercial servers, but secured transactions alone do not a purchase make. Integrating secured communications with the core Web server improves overall security because it helps ensure that once the confidential information is on the Web server, it is delivered to the user or stored on the server with appropriate levels of security.

Companies like CyberCash have had considerable success providing middleware services that handle secured processing of credit card transactions. These services go beyond simply collecting credit card information securely; they include end-to-end processing of the credit card information from the point the user enters it to the place where the merchant services company transfers the funds into the vendor's bank account. The CyberCash cash-register program runs as a separate server process on the Web-server machine, and it is responsible for transferring the credit card information securely over the Internet to the CyberCash clearing house.

Another area that will see considerable development is a fledgling class of server software known as the electronic shopping cart. This software organizes volumes of product information, including prices, photos, and product descriptions, for easy navigation by visitors to the Web site.

Once the information has been organized and displayed, users can simply select an item while browsing through the online catalog. As they enter how many of each item they want, the shopping cart software builds a running total of the items purchased and the amount due, and presents it to the user when he or she decides to "check out" of the store.

There are at least a dozen stand-alone shopping-cart applications available on the Internet, either for free or at prices ranging from \$500 to \$800. These include MiniVend (<http://www.minivend.com>), Surfcart (<http://www.surfutah.com/surfcart/help/install.html>), and iShopping Wizard (http://www.objnet.com/webmall/webmall_esp_literature.html). Some use SSL to transfer secured credit card information back to the merchant for processing, while others provide direct links to the CyberCash software for credit card processing.

The problem with these shopping-cart applications is, again, a lack of integration with the basic Web-server package. Because stand-alone shopping-cart software usually requires that a separate server program be run on the Web-server machine, it is yet one more product that needs to be managed. In addition, administrators often run into problems integrating access permissions of the shopping-cart program with the permissions of the Web server, because merchants will need certain privileges to update their sites while administrators prefer to limit access as much as possible to maintain server security.

Search tools, which are already part of many server packages, present another complication. In a commerce site, particularly one with a database back-end or shopping-cart system in place, the search tool needs to be able not only to sift through the information, but display the information it finds in a format that can be used by the shopping-cart application the site is running. This type of integration is difficult—if not impossible—without both the search tool and the shopping-cart application being closely integrated with the Web server.

Some level of e-commerce integration is already a reality in server packages such as O'Reilly & Associates' WebSite Professional 2.0 and Netscape Commerce Server. Other commercial server vendors are working to integrate commerce tools like shopping carts, search tools, and electronic transactions into their core server suite. This tighter infrastructure will help ease the headaches of creating and maintaining a virtual storefront on the Internet.

Web-Server Software AT A GLANCE

Company	Product	Phone/URL	Description	Platforms	Pricing
America Online	AOLServer 2.1	(800) 827-3338 http://www.aolserver.com	A full-featured SSL-capable Web server that supports a handful of SQL databases. Also allows users to publish documents using standard Put commands.	Windows NT, Solaris, SGI, Linux	Free
Apache	Apache 1.2	No support number available http://www.apache.org	A free, high-performance Web server that is available on the Internet with source code.	Most Unix versions, OS/2, Windows 95/NT	Free
C2Net	Stronghold 2.0	(510) 986-8770 http://www.c2.net	A version of Apache that supports encrypted data transmission using SSL.	Most Unix versions, Windows 95/NT	\$995
Computer Software Manufaktur GmbH	Alibaba	43 1 513 44 15 http://alibaba.austria.eu.net	An SSL-capable Web server for Windows 95 and NT that supports most standard Web protocols. No direct database hooks, however.	Windows 95/NT	\$99
Electronic Dimensions	Edmine Webware	61 6 290 1420 http://www.edime.com.au/Webware/	Another NetWare-based Web server. This one doesn't support SSL, but it does support multiple virtual domains and has direct plug-ins to database engines.	Novell NetWare	\$295 to \$495
The Internet Factory	Commerce Builder	(510) 426-7763 http://www.ifact.com	An SSL-capable Web server that includes a proxy server, Usenet news server, and chat server.	Windows 95/NT	\$395
Microsoft	Internet Information Server 4.0	(800) 426-9400 http://www.microsoft.com	Graphical, easy-to-administer Web server that includes a search engine and uses NT's own security subsystem.	Windows NT	Free
Netscape	Enterprise Server 3.0	(415) 937-2555 http://www.netscape.com	A Web-server suite designed for helping large groups of people create and manage a Web site. Includes a variety of tools to make collaboration and work flow easier.	Windows NT, HP/UX, Digital Unix, AIX SGI, Sun, BSDI, SCO	\$1,295
Netscape	FastStart Server 2.01	(415) 937-2555 http://www.netscape.com	An entry-level Web server that includes many of the features of the Enterprise Server, including SSL, but without all the bells and whistles. Not as scalable across a large enterprise.	Windows NT, HP/UX, Digital, AIX, SGI, Sun, BSDI, SCO	\$295
Novell	Novell Web Server 3.0	(800) 638-9273 http://www.novell.com	A basic server ideally suited for intranets rather than full Internet use. It runs on Novell NetWare, but lacks many of the features required of a full Internet server such as virtual domains.	Novell NetWare	\$995
O'Reilly & Associates	WebSite Professional 2.0	(800) 998-9938 http://software.oreilly.com	WebSite Professional comes with extensions to allow sophisticated programming and commerce applications.	Windows NT	\$799
StarNine Technologies	WebStar 2.1	(800) 525-2580 http://www.starnine.com	A Web server for Macintosh servers that supports SSL, browser-based server administration, and CGI programs written in C, Perl, or AppleScript.	Macintosh	\$499
Zeus Technology	Zeus Server	44 (0)1223 421727 http://www.zeus.co.uk	A compact, high-performance Unix Web server that supports SSL and comes with graphical administration and configuration utilities.	Solaris/Sparc, SunOS, IRIX, Linux, BSDI, FreeBSD, OSF/1, HP-UX	\$900



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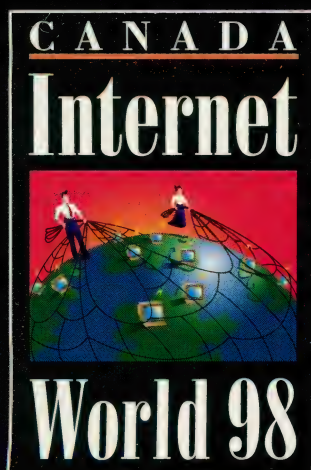
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for creation and use of Active Server Pages using Microsoft's ActiveX scripting language, a free audio/video streaming server called Microsoft NetShow, and an Index Server search engine. IIS' tight integration—as opposed to Apache/Stronghold's add-on structure—is a boon for less technical administrators or those on a tight deadline.

Netscape Enterprise Server 3.0 is yet another example of bundling commonly needed functionality into a single package, yet it focuses more on taking over the complex responsibilities of a network server.

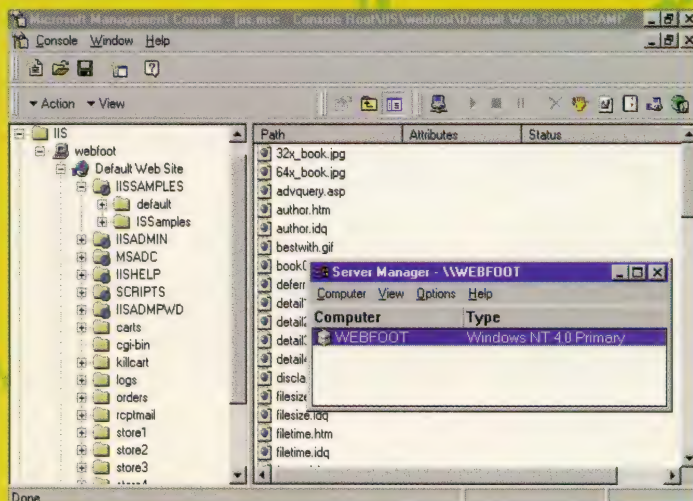
The ultimate goal of this approach is to help large organizations publish huge volumes of information on the Web without having to navigate between the data stores of its network and those of its Web-server farm.

Netscape's Web-server development strategy aims to take responsibility for all basic server functions, including data and user management, from the underlying operating system and make them functions of the Web server itself. Should this approach succeed, it would take away the edge Microsoft has with its tight integration of OS and Web server.

This is similar to the strategy Lotus developed for implementing Notes, where network and data security and management were handled by the Notes server, which happened to sit on top of an NT, OS/2, or Unix system but did little to integrate the features of the underlying operating system into the server itself.

Key features in Enterprise Server 3.0 include a graphical site manager called Netshare that connects to the Web-based security system. The tool provides a seamless, file system-type view of files and directory trees on the Web server. The package includes a document-management system that allows users to create workflow rules for passing documents and pages around on

the Web server, and it provides the appropriate security tools to ensure that those rules are followed.



The Microsoft Management Console is the focal point of IIS 4.0's tight integration with Windows NT; administrators can use the same tools to control the server and Web-services access.

The server also includes support for hooking Web applications directly into high-end, enterprise-class databases including Informix, Oracle, Sybase, and DB2, giving this server an edge for large, corporate sites that plan to integrate volumes of database-managed content into a Web application. Netscape includes its own directory services for user and group

approach to server administration and management that is becoming an industry standard among Web-server products.

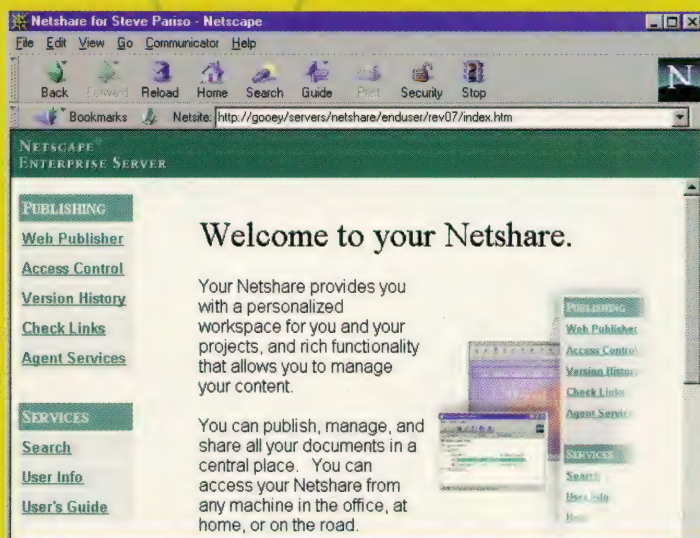
Netscape also offers FastStart Server 2.01, an entry-level product that includes SSL but not the other high-end features present in Enterprise Server. At \$295, FastStart is less than one-quarter the cost of the enterprise edition, but isn't scalable for large environments.

With a range of new Web-server products and features available, there's no reason to get stuck behind a text-based configuration tool or cryptic management commands. There's also no reason not to have a Web server that was designed specifically for the type of content you plan to publish.

When choosing which new server to deploy in your business, take a look at the type of content you wish to publish, then select the server that offers the most tools to facilitate this type of content. If, say, e-commerce is your major reason for being on the Web, O'Reilly's WebSite Professional is probably your best choice. For those wanting seamless integration of features and well-defined

publishing rules, the Microsoft and Netscape server packages will be a better choice.

Enhancements being developed by commercial server vendors are rapidly becoming standard requirements for new Web sites. And just as computers streamlined the paper and hot-type printing processes of yesteryear, these sophisticated new servers will increase productivity for Web developers, leading to newer, more sophisticated Web sites and Web-enabled applications on this new breed of printing press for the digital age. ■



Netscape's Enterprise Server features Netshare, a graphical site manager that lets users set workflow rules and security procedures.

management, but the system also supports the Lightweight Directory Access Protocol (LDAP), allowing administrators to spread directory services across a number of different Web servers. The server and its various subsystems are administered using browser-based utilities or Java applets, an

approach to server administration and management that is becoming an industry standard among Web-server products.

Sean Fulton writes about the Internet from Port Washington, N.Y., where he is vice president of new products for an Internet service and consulting firm.



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BY JEFF UBOIS

CONTENT KING

Michael Bloomberg built a financial publishing empire on a closed network. As he waits for the Internet to mature, he sees an even bigger opportunity.

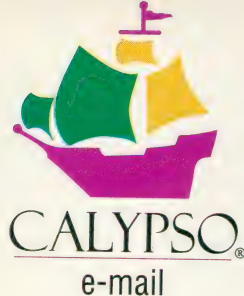
As most Web publishers have discovered, selling subscriptions to an electronic information service is a hard thing to do. Yet Michael Bloomberg has managed to build one of the world's fastest-growing media companies by doing exactly that. His company, Bloomberg Financial Markets, has managed to sell more than 77,000 subscriptions, at \$1,000-plus per month, to brokerage houses, commercial banks, and government institutions. Subscribers get a proprietary Bloomberg terminal, financial analysis software used to access the Bloomberg databases, and up-to-the-minute reporting on capital markets around the world.

Bloomberg founded his company in 1981 after being fired from Salomon Brothers, in part because of his outspoken style. Since then, Bloomberg Financial Markets has expanded into television

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Bloomberg built his publishing empire on a closed network running custom-built terminals. He sees the Web as an opportunity to cut costs and expand his reach.



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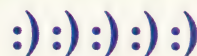


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and radio broadcasting, book and magazine publishing, and Web operations (<http://www.bloomberg.com>). It has also spawned a news organization, Bloomberg Business News, which provides information to hundreds of newspapers and magazines around the world, including *The Economist*,

IW: In your book, Bloomberg by Bloomberg, you seem fairly skeptical about the utility of the information that's currently available on the Web. Why is that?

BLOOMBERG: The model I talked about was Adam Smith. The evidence that most things

So when we and our competitors go out and sell information, ours is unique, so we can sell it for a thousand bucks a month and they can't sell theirs for a dollar. Why? It gets back to demand and supply.

IW: It seems that in a sense you're renting a software application, which was the old model of charging that IBM had. Do you see yourself as a software company?

I NEVER LOOK AT THE COMPETITION. I DON'T CARE WHAT THE OTHER GUY DOES.

International Herald Tribune, Newsweek, The New York Times, USA Today, and The Washington Post.

Though Bloomberg insists the Internet is his friend, he has expressed skepticism about the value of information available on most Web sites, the prospects for most Internet startups, and the viability of ad-supported Web publishing.

INTERNET WORLD: How will the Web change the information you'll be offering, and the way you'll be delivering your service?

MICHAEL BLOOMBERG: People focus on the distribution method, and that's because the distribution method is capital-intensive and requires satellites or cable systems or phone lines. But in the end, all of those are commodities, and though every one now has a particular advantage in terms of cost or technology, those individual differences will go away, and we'll have a big commodities business. The press writes about it because that's where the big bucks are, but the important thing is content.

Content is not only collecting facts, but categorizing them, indexing them, and then giving you the ability to find them and to do something with them. That's what people are paying us for. People say to me, "The Internet's going to put you out of business!" but we couldn't be happier about it—it gets us out of the communications business. The availability of data in machine-readable form over the Internet doesn't really hurt us because people aren't paying us to be a transmission medium, they're paying us for value added. And the value added is there whether it gets to you over a satellite or over cable, Ethernet, or a dial-up line.

on the Internet are available in multiple places and are not terribly useful is that you can't charge for them. The companies that try to have a model where they charge, with the exception of Dow Jones, all walk away shaking their heads saying, "You can't do it, it has to be advertiser-supported." There isn't enough advertising revenue to support everybody, but that's a separate issue.

BLOOMBERG: Well, it's a three-legged stool. You cut off any one of the legs, the stool falls over. I don't know whether people are buying our service for our data or for the ability to find it and do something with it. We clearly are in the business of renting software that provides access to our data; that software does a few other things, including combining other people's data with ours. But the model that you suggested is a good one—if you pay a premium, we'll also provide the hardware to run it on, but you don't have to have our hardware. We will also provide you with a communications system to get at it.

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IW: As you look at options for providing communications systems, what kinds of access technologies—ISDN, xDSL, cable modems, etc.—do you expect to win?

BLOOMBERG: We are users, so I don't care who wins the battle. I have no vested interest. I don't own any distribution, and if we could get out of the distribution business, nobody would be happier than me. We have a \$100 million telephone bill for long-distance service. If everybody came to us over the Internet, fundamentally what we would do is transfer the expenses that we have to the customers, so I couldn't be happier.

People who think I'm not in favor of the Internet don't understand: I'm its biggest advocate. The trouble is, it isn't there yet. A year from now, it will be. The problems are all in the ISPs and not on the backbone, but nevertheless, you cannot use the Internet, particularly at 4 p.m. or 5 p.m., to access our service very easily. Do I care whether you use the cable modem or ADSL? No.

IW: There were meant to be three revenue sources for Web content: micropayments, subscriptions, and ads. The first two haven't really caught on. Do you expect them to eventually?

looking at commercials. At the same time it does make it easier to insert commercials. But that's the battle. The public is jaded and overexposed; there's a limit to how many messages the public is willing to look at.

WE WILL GET OUR TELEVISION ON DEMAND OVER THE WEB. THAT'S THE WAVE OF THE FUTURE.

BLOOMBERG: Subscription works with us, and a little bit with *The Wall Street Journal*, but does not seem to for most. I think advertising is a lot of bull. I'm not suggesting there isn't some, but I think a lot of it's just smoke and mirrors. Keep in mind I sell ads on our Web site, on radio, on television, and in our magazine, so I hope it grows. I think technology distracts people from

IW: How about microtransactions?

BLOOMBERG: That has a lot of potential. You can sell things for trivial amounts of money. The processing costs when it's all electronic are so close to zero that I don't see why that model wouldn't work.

IW: One reason some people suggest it won't work is that you don't want to require people to make a decision about every mouse click, even if it is an infinitesimal amount of money.

BLOOMBERG: That's just somebody who's afraid to sell.

Let's get back to ads for a minute. One of the differences between advertising on the Net and advertising on radio, television, or in magazines is that on the Net every single ad is direct response. And people are scared to death of that, because what do you do if nobody's watching? Lots of people in the food chain would get badly hurt if we could really measure who was watching what. With the Internet, the advertisers are getting a lot smarter. You put up a little teaser ad, and nobody will pay for that. If somebody clicks through and hyperlinks to their Web site, then you get paid three cents. And I believe that the results so far are not encouraging to the advertising business. If you look at radio, TV, and magazine ads, the one kind of advertising the media owner does not want is that direct-response stuff. The reason they don't want it is if they did it, they would find nobody was watching and they wouldn't get paid.

IW: Do you see your collection of services also evolving to support content from other

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people? Will you become an enabler for smaller content producers—financial information, for example?

BLOOMBERG: No. Our strategy is to provide everything and if we have the ability to do that, why help others? We would rather be in that business ourselves. We also use third-party services.

IW: So nothing is in the works along the lines of AOL's Greenhouse?

BLOOMBERG: I was on a panel up at Columbia Journalism School and a woman stood up and asked the panel what she should do. She had a little company; should she partner with people? And the woman who was representing Microsoft's Sidewalk said, "Oh yes, what you should do is call us and partner with us, and we'll help you along." There were snickers from people—nobody said "we'll take everything and screw you." I responded, without mentioning Microsoft, "If I can give you any advice at all, don't partner with anybody."

IW: But without the backing of a large company, how can small content providers attract a supporting audience?

BLOOMBERG: The great thing about the Internet and publicly available common hardware is that the great expense of becoming a Michael Bloomberg has gone away. So you don't have to have your own hardware or your own network. You can focus just on content. It may not be easy, but you're in better shape today than ever before if you want to go out on your own.

IW: So how should ambitious, small content providers define their audience or products? What opportunities are unmet?

BLOOMBERG: The question they should answer is, "What's different between mine and the other guy's?" If you can't explain it in three sentences, it's too complex for the public to understand. The fact that you want to succeed has nothing to do with whether you will.

IW: Are you watching the database copy-right issue?

BLOOMBERG: Copyrights are a very big problem. Free information for everybody is a great idea unless you're an author. In our

case, it isn't a problem because even if you had a copy of what we have, it changes so much that its usefulness declines precipitously with time. The kind of databases we have need constant updating, so just stealing a copy of the database doesn't get you that service. We have one advantage in that all of our stuff is request-response, as opposed to Gates' product where if you've got a copy of Microsoft's software, you can make a million copies and they're all as good as the first. Even if you could copy our password and all the protections, in the worst case, only one person can use it at a time.

IW: What are the models out on the Net now that you find intriguing?

BLOOMBERG: I never look at the competition under any circumstances. It wouldn't even occur to me to look. Our job is to find something that potential and existing customers like to use. And if I start watching the other guy, yes, I'll get the benefit of his good ideas, but I'll also get his bad ideas as well, and we're doing better, so why would I want

to follow him? I probably should spend more time looking at that stuff, but I don't.

IW: What would you like to be able to do next on the Internet? Do you have plans that you can talk about?

BLOOMBERG: No. If the Internet really worked reliably and consistently and fast, we would use it as just another way of renting bandwidth that has lots of ports of entry. This would benefit a company like Bloomberg in that the user pays the communications cost, whereas typically the supplier pays that cost. But it isn't quite there yet. We do use it for our portable service, and in places where we can't lease our own lines. But generally speaking, it's not ready for prime time.

IW: How about trades and transactions?

BLOOMBERG: Remember, our screens are so important to people that whether it's a transaction or a piece of information is immaterial. Everything we do is as



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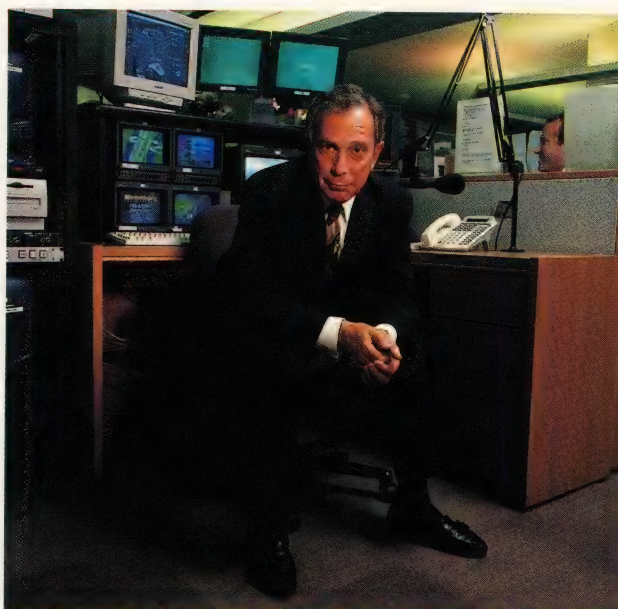
important as a transaction. So if they can't use our service for transactions, they can't use it for anything else, either. We do a lot of transactions over our system, and we move those to the Net. Everything we do works on every one of our terminals and every one of our media.

IW: You are serving a global market. How many of your users are outside the United States and how do you go about localizing content for them?

BLOOMBERG: About 48 percent is outside the United States. The different parts of the world seem to be growing at the same rate. And I think that's probably the percentage of the capital markets business in and outside the U.S. We're almost ready with Web sites in many different languages.

Our terminal product is translated into French, German, Italian, Japanese, Korean, and two different kinds of Chinese; we're working on Hindi and Malay for Asia and Europe, and for Central and South America we've got Spanish and Portuguese. Our television overseas is not done by Americans who learned a second language in school, it's done with local people who do local stories that are of local interest.

IW: Is there any way for small companies to begin to localize their Web sites?



Bloomberg believes the Internet makes it easier for small businesses to succeed: "It may not be easy, but you're in better shape today than ever if you want to go out on your own."

BLOOMBERG: The great advantage of off-the-shelf hardware and the Internet is that the ease of entry for a lot of these small companies is dramatically improved. You don't need the big companies anymore; that's the great beauty of all this stuff.

IW: You don't see concentration of ad revenues at the top sites leading to a winner-take-all scenario?

BLOOMBERG: No, there's no reason to believe that whatsoever because not everybody is

going to perceive the same site as the most valuable. The beauty of technology is that you can customize. The more you customize, the smaller the audience, right down to a specific person. That's the great challenge—most of the world will still want to watch the World Cup final or the Super Bowl. But when it comes to movies, far fewer people want to watch a specific movie at the same time. When it comes to news, it gets even finer. And when it comes to esoteric things, how many people do you think go to the Henry James Web site in a given instant? Not many.

IW: What's got you puzzled at this point about the Net?

BLOOMBERG: People don't understand what's there. It will do a lot more than anybody thinks, but it will do different stuff. We are not all going to go to the Henry James Web site, but we will get our television on demand over the Web—that's the wave of the future. So you'll watch *Gilligan's Island* reruns and I'll watch *McHale's Navy* reruns and nobody else in the world will be watching them at the same time, or probably even the same day, and that's OK. That's why video-on-demand is so great. ■

Jeff Ubois is a contributing editor to Internet World.

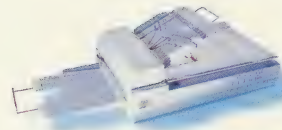
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CIRCLE NUMBER 131

I M A P

L D A P

S / M I M E

H T M L

business



E-MAIL REINVENTS ITSELF

BY NELSON KING

Pulled headlong by a powerful team of new standards and protocols, Internet e-mail is surging ahead of LAN-based e-mail and postal mail—even the telephone—as our primary medium of long-distance communication. Whether or not this is true in your organization, it's pretty clear that as an active Internet user you'll be spending an increasing portion of your life over the coming months and years dealing with e-mail. Which, in turn, means that your choice of Internet e-mail software will have a growing impact on your working and other communications. Ideally, your mail client should be an active ally that will do a lot more than shuffle messages from one place to another. It should help you organize your burgeoning store of messages, filter out unwanted junk mail, transfer files, put an elegant face on your correspondence, and keep your private messages private.

To see how Internet e-mail programs measure up to the challenge and the new standards, this roundup covers 12 products—from companies big and small—that conduct most of their business over the Internet: Microsoft Outlook

Express, Netscape Messenger, Qualcomm Eudora Pro, NetManage Z-Mail, Claris Em@iler, Coordinate.com Beyond-Mail, TeamWARE Embla Plus, E Corp. email 97, CommTouch Pronto97, David Harris' Pegasus Mail, CE Software QuickMail Pro, and Micro Computer Systems Calypso. The e-mail software market is very competitive, and, unfortunately, the vendors surround the marketplace with a dense thicket of jargon. Let's see if we can cut through the verbiage and help you sort the options.

SCRUTINIZING STANDARDS

IW Labs tests found four new standards are emerging as defining features for e-mail today: HTML, IMAP-4, LDAP, and S/MIME. We don't consider all of them to be essential just yet, but in coming months they will grow in importance. IMAP and LDAP are very desirable for the management control they offer, and many organizations

**BETTER SECURITY AND
MANAGEMENT TOOLS GIVE
INTERNET E-MAIL CLIENTS AN
EDGE OVER CLOSED SYSTEMS.**

have begun to use them. HTML will soon be essential since more e-mail is being sent with HTML coding every day. Perhaps most exciting right now is the fact that S/MIME is now in an e-mail client for the first time and we are close to a day when an industrial-strength standard for encrypted e-mail will be in place.

E-MAIL ONLINE AND OFF

Below the surface, e-mail is still fundamentally simple—messages are sent from a client computer to a mail transport server. The transport server reads the outgoing address and sends the message, with any attached files, to a post-office server where they are stored until retrieved by another client. But as e-mail has woven itself more deeply into our working life, mail logistics have become more complex. For example, what happens to messages when you can't reach your e-mail server? This is where IMAP comes in.

For regular travelers, the ability to conveniently work with e-mail while offline is crucial. To be an effective offline tool, e-mail software must be able to queue outgoing messages so they can be sent when a connection is made. More essential, the e-mail client needs to support selective downloading of messages and maintain a user's complete message store on the mail server, but allow its management from the local system. While some mail servers based on the now-standard POP3 (Post Office Protocol) allow leaving messages on the server after download, they don't allow any management of the message store. By contrast, the newer IMAP-4 (Internet Mail Access Protocol), fully supports these features. Changing your e-mail client is not enough to gain the benefits of IMAP-4; you also need an IMAP-4-enabled mail server (next month, *Internet World* will feature a report on e-mail servers).

For many, an equally important feature is the ability to support multiple accounts, for example, where you have one e-mail account for home and a different account at work. This feature is supported solely by the client and most of the programs we tested provide it.

LOOKING THROUGH YOUR MAIL

Most of an e-mail program's user interface is devoted to displaying and organizing messages. We found a surprising degree of similarity in how the 12 products handle this task. Typical is a list of folders (e.g., Inbox, Outbox, and Trash) on the left, and a row-by-row display of message headers on the right. A new element that we applaud (and would like to see more widely adopted) is a preview pane, a section of the window that displays message contents as you scroll through your headers. It's both faster and less distracting than clicking on a message to open a read/edit window.

Depending on the volume of mail you receive, the ability to efficiently organize messages may be your mail client's most important feature. All of the programs reviewed let you drag and drop messages between folders (including folders you customize for yourself). Many, but not all, let you create *filters* that automatically send particular messages to specific folders. Until recently, filters, also known as *rules* or *agents*, were considered an advanced feature and have intimidated some mail users. Today's programs universally have tried to make it easier to create rules by

Best of Test

MICROSOFT OUTLOOK EXPRESS

NETSCAPE MESSENGER



With so many competitors and so many new protocols and standards, Internet e-mail leadership is truly a game of leap-frog. Who's ahead at any given moment largely depends on who's released a new version. At this moment, two products have just made major strides and are in a dead heat: Microsoft Outlook Express and Netscape Messenger. Both support every important standard and protocol; both are superbly designed, with many convenient touches. To decide which is best for you, look at how they're bundled with other software (Outlook Express with Internet Explorer 4.0 and Messenger with Communicator 4.0). Messenger/Communicator is best for the corporate market, Outlook Express/Internet Explorer is better for a home or small office. Don't carry this distinction too far; they're both capable e-mail clients in any context. If they have a weakness, it's a lack of programmability in message filtering. Where this is a priority feature, we recommend last year's best-of-test choices: Banyan's BeyondMail and Qualcomm's Eudora Pro.

describing elements in plain language and letting you select options from lists. Microsoft Outlook Express provides an Inbox Assistant, a step-by-step guide to creating filter rules. This helps, but you still need to understand the programminglike concepts of word matching and actions that follow triggers.

Filters have many uses, for example, they can help you weed out junk mail by having all messages with "SAVE \$\$" sent directly to the Trash folder. They can also be used to *create* e-mail, such as sending an "I'm on vacation" message during a specified period. A few programs, including BeyondMail, Pegasus Mail, and Z-Mail Pro, have extended filtering into powerful programming languages for advanced users.

The ability to search among your messages is another crucial e-mail tool. We're happy to report that all the products in this review do at least a decent job of searching; some are superb.

ADDRESSING THE DIRECTORY ISSUE

A requirement of any mail system is being able to find addresses for your correspondents. All of the programs tested have an address book to store at least e-mail addresses. Some can store additional information such as phone numbers, street addresses, and Web-based telephony or conferencing addresses. Entering addresses is a chore, and many of our 12 programs can automatically take addresses from incoming messages and transfer them to the address book.

We put a premium on programs that support the new LDAP (Lightweight Directory Access Protocol) standard for Internet addresses. Microsoft Outlook Express and Netscape Messenger both supplement their internal address book by letting you connect with Web-based LDAP directories like Four11 so you can, at long last, look up an e-mail address as you're composing a message.

Although speed is the essence of e-mail, most people would like their e-mail to look good. At a minimum, that means spelling errors are corrected and the format looks professional. This is especially true of business correspondence, where e-mail can be no less important than a formal letter or a brochure.

While the majority of programs produce only plain text messages, a few, spearheaded by Microsoft and Netscape, sport the new HTML message format. This allows the same decorative elements that we've become accustomed to seeing in Web pages. We also liked programs that let you create message templates for repeatedly used formats. Templates can be great time savers, in addition to standardizing the appearance of messages.

The ability to attach files to messages is now essential to an e-mail client program. The problems we saw in the past when incompatible encoding systems were used for the necessary binary-to-text conversion have now been eliminated as the industry has settled on MIME (Multipurpose Internet Mail Extensions) as a universal standard. All 12 e-mail clients support MIME, and many support other systems (e.g., uuencode, BinHex) as well. If you still have problems decoding attachments, you will solve the problem with any of these programs.

A new, special kind of attachment we like is vCard identification, a format for business card information found in Netscape Messenger. vCard efficiently transfers personal contact data into address books and correspondence.

HOW SAFE IS YOUR MAIL?

Hand in hand with the growing importance of e-mail has been a concern for the security and privacy of e-mail messages, and

here we discovered a real difference among the products. Some of these programs have no security features; others like Microsoft Outlook Express, have an abundance. In our view, the most desirable security feature is the new S/MIME (Secure MIME) protocol, which is safer on two fronts: It uses digital certificates to verify the authenticity of the sender and it encrypts the message content for its trip between sender and receiver. As with all encryption techniques, both sender and receiver must use compatible products and that's why S/MIME is so appealing; it offers the first real chance of an open standard among products. Unfortunately, the protocol is not yet final. S/MIME details are being debated by the Internet Engineering Task Force and a standards war could emerge.

For now, S/MIME remains an industrial-strength security system that's a *de facto*, but not an official, standard: It's built on the same technical underpinnings (certificate-based authentication and public-key/private-key encryption) as SET and other secure electronic-commerce systems, and all S/MIME-enabled mail packages can intercommunicate securely. In the meantime, if your mail client doesn't support S/MIME, you can use a third-party product like InvisiMail or PGPmail to encrypt your mail—as long as your correspondent uses the same product.

Taken collectively, we believe IMAP-4, LDAP, HTML messages, and S/MIME add up to an e-mail revolution. Whether or not iron-clad security, remote mail management, or elaborate mail formatting top your list of mail needs—today or in the future—their availability will continue to shape the communications landscape. This is a good time to consider how you can put them to work.

THE REVIEWS

BeyondMail Professional 3.0

COORDINATE.COM (BANYAN SYSTEMS)

Corporate e-mail—whether it runs over the Internet or on a LAN—has an added dimension: The software must work well from the system administrator's point of view, which can be almost as important as the end-user's perspective. This corporate reality is perhaps the biggest reason to consider BeyondMail Professional 3.0 from Coordinate.com, a division of Banyan Systems. While the user tools in BeyondMail may not be as advanced as the other e-mail clients reviewed here—there's no support for LDAP, IMAP-4, or S/MIME—the administrative tools for BeyondMail are strong, as is the implementation of rules.

What does this mean? That a corporate system administrator can install BeyondMail and administer it easily from a centralized location. Rules can be set up for specific workgroups or departments. As implemented in BeyondMail, rules can be very complex, more akin to an advanced scripting language. You can set up a form to perform a routine task (like a monthly report to your superior—BeyondMail includes several forms, including

memos, phone messages, and more) and then use the Rules function to control the behavior of the form. Sales reports can be set up to go automatically to your boss, for instance, while notes from an annoying co-worker can go directly to the trash. You can also set up BeyondMail to send specific responses to specific queries; for instance, the boss can automatically receive a file from you if he or she sends an e-mail message with a specific text string as the subject, such as "send march98.xls."

Other BeyondMail features are important when viewed from the enterprise perspective. While LDAP is not yet implemented (its inclusion is promised for a fall update), BeyondMail does include enterprise directory services in the address book through Banyan StreetTalk directory services and the Web site Switchboard (<http://www.switchboard.com>). The StreetTalk implementation is a big selling point for BeyondMail: It's considered the most advanced and powerful enterprise directory service, and many corporations already have StreetTalk directory services installed.

There are some shortcomings, especially outside of a homogeneous corporate environment. While Coordinate.com says that BeyondMail can handle HTML within messages, we found that it can't process HTML attachments or HTML formatting created in other software.

As a corporate tool, BeyondMail 3.0 is a strong contender for enterprises—especially for those that already have an investment in StreetTalk and Banyan technology. But for those looking for a stand-alone e-mail client, BeyondMail 3.0 doesn't have the bells and whistles that can spice up your e-mail experience.

Calypso 2.2

M I C R O C O M P U T E R S Y S T E M S I N C .

A clean appearance and ease of use are appealing aspects of Micro Computer Systems Calypso 2.2. Once Calypso is installed, you can set it up for multiple users (for family members, for example), each with a separate mailbox, which can have multiple mail accounts. There is similar flexibility in mail-server interactions (storing, fetching, and deleting messages), which makes the program adaptable for offline and online operations.

Accessibility is a hallmark of Calypso; its Windows Explorerlike display of elements (such as mailboxes, accounts, templates, groups, and filters) provides a nice entry into the program and an alternative to crawling through a complex menu system. There is also a preview pane for scrolling quickly through messages.

Filtering can be customized for each mailbox and can be applied to incoming and outgoing messages. Calypso's filter capabilities are not nearly as sophisticated as those of Eudora

Blind Send feature, which lets you send messages to a group but shows only a single To: address.

Message creation in Calypso is utilitarian, other than templates for frequently repeated messages and support for MIME attachments. There is no enhanced text or HTML messaging. Calypso's security arsenal is limited to passwords for mailbox entry; the program doesn't support user authentication via digital certificates or any form of encryption.

Calypso succeeds in keeping e-mail simple, but it leaves out features found in other programs. We liked its support for multiple users and accounts and its offline/online controls, but Calypso comes up short on many emerging standards (LDAP, S/MIME, and vCard). Competing programs, such as Microsoft Outlook Express, manage to incorporate these standards and many other features without sacrificing ease of use. It's perfect for personal use, but in a corporate environment it will seem limited.

Claris Em@iler 2.0

C L A R I S C O R P .

Version 2.0 of Claris Em@iler is a nimble, easy-to-use mail package (currently available only for Macintosh) with many nice interface touches. But it's not a product for those looking for the latest improvements in areas like security and message formatting. Em@iler is not especially Net-savvy (it doesn't recognize URLs, for example); probably its most compelling feature is its ability to handle mail from online services such as AOL, CompuServe, RadioMail, et al., along with SMTP/POP mail.

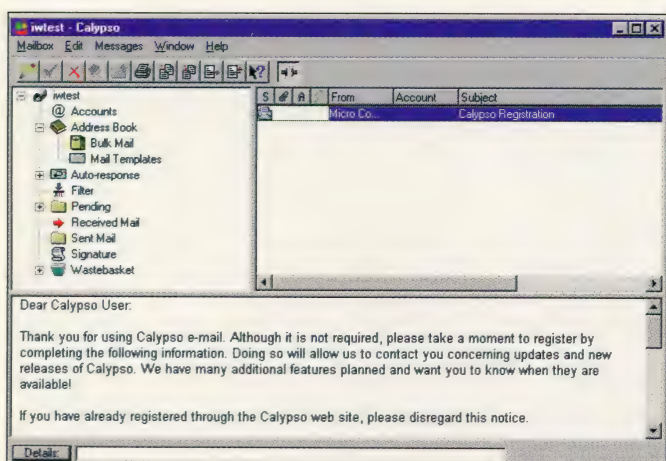
Installing Em@iler is Mac-easy, but you'll have to configure separately each mail service you plan to use. Setting up Internet mail presented no problems. A well-thought-out set of preferences for each of 10 aspects of the program—incoming messages, replies, mail actions, and the like—makes for a fair degree of customization, painlessly administered.

The main tool for accessing and filing messages is a two-pane window with mail folders on the left, the contents of the selected folder on the right. Sorting messages by date or subject is a one-click operation. To file, just drag and drop one or more messages from the header pane to the folder of your choice. You can create and nest folders to your heart's content.

Em@iler's text editor is straightforward: No templates, HTML formatting, or other frills intrude. The address book has a nice auto-lookup feature: Start keying in the recipient's name; if it's in the book, the program will fill in the full address for you.

Enclosures (attachments) are easy. Just drag and drop files to a special pane on the Outgoing Message window. To specify MIME, BinHex, or uuencoding, you just pick from a drop-down list. A particularly nice interface detail is a drop-down list for selecting among multiple signatures on the fly.

Em@iler's mail actions are definitely ahead of the curve, going beyond simple filtering and filing of incoming messages to automated replies and running AppleScripts. Further, they can be based on multiple criteria and complex logic, yet they're easy to set up.



Calypso 2.2 exposes almost all of the options and elements of the program in its mailbox and folder list.

Pro—for example, it only supports a single action per filter—but are in keeping with the simplicity of the rest of the program.

The address book is also simple to use but holds only basic information and does not support LDAP directories. Calypso can create mail groups, and has an interesting Bulk Mail capability where it will temporarily use a text file of names and addresses to send blind-copy messages. This utilizes Calypso's

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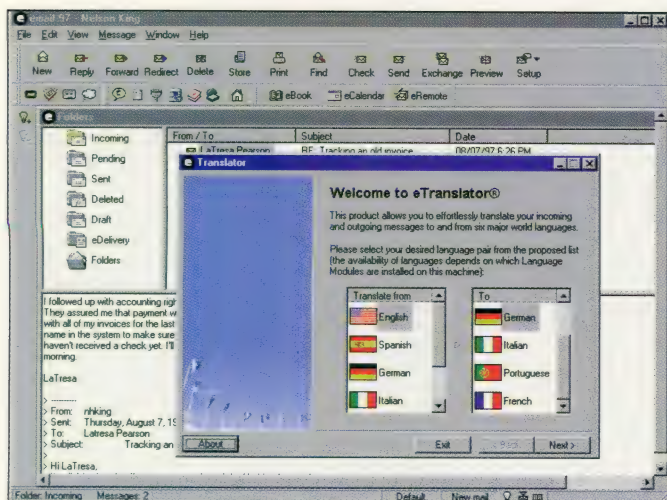


With packages like Netscape Messenger available for comparable prices, we see Em@iler appealing primarily to those who prefer speed and ease of use over sophistication, and who use mail from dial-up services in addition to Internet mail.

email 97

E C O R P .

E Corp's email 97 has so many specialized tools, it could be the Swiss Army knife of e-mail. The result is reminiscent of a PIM with an e-mail-centered approach. Email 97 sets up easily, partly because it can detect some existing e-mail programs to transfer configurations and data. E Corp. also offers a number of downloadable add-ons from its Web site (<http://www.e-corp.com>). This includes eSynch to synchronize



eTranslator, an add-on included with email 97, can translate e-mail messages to and from six languages.

messages for travelers (\$39.95), and eRecovery to repair and maintain the address book and message folders (free).

The three-pane, multitoolbar design is a little busy, and the panes don't always behave properly (when you scroll the message in the preview pane, the other panes scroll out of sight). But these are minor quibbles for a basically solid and easy-to-use interface. Unfortunately, the online help is sparse and incomplete.

Among the more unusual features in email 97 are eCalendar, for group scheduling over the Internet, and eTranslator, which can translate messages to and from English, German, French, Italian, Spanish, and Portuguese.

You can have multiple accounts in email 97 as well as multiple locations with different dial-up configurations. Filters can be customized for each account. Email 97 has rules for incoming mail only, but its rule-making capability is quite good. An unusual fillip is the ability to activate rules on a schedule for specific days and during certain hours.

The address book (eBook) holds minimal information but does the job. Email 97 can automatically add names and addresses from received mail, sent mail, and the Windows Clipboard. There is also LDAP support. Two-way pager messaging will be an important feature for some people. To create messages, email 97 does have enhanced text with support for HTML messages coming soon from ePublisher.

The list of value-added material is long, and some items may be decisive for particular uses, such as the translator feature. Beyond that, email 97 is a fundamentally sound product that needs a little more polishing and integration.

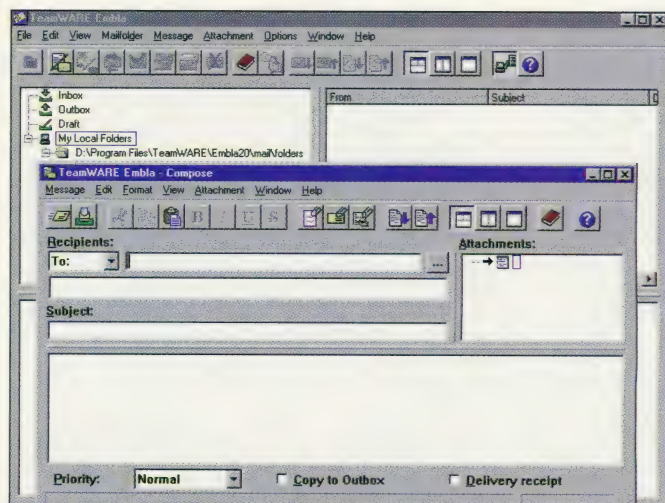
Embla 2.0 Plus

T E A M W A R E G R O U P

Although TeamWARE's Embla 2.0 Plus (the commercial version of Embla 2.0) has good features like strong support for IMAP-4 servers, it strikes us as one of those programs that, despite the good intentions, isn't quite up to snuff. Installation is quick and easy—though occasionally we ran into not-quite-finished details like a user manual without an index, or we'd try to create a new address book and a message would tell us to run the configuration wizard. Then we'd try to run the configuration wizard and it would say that it had already been run.

Embla's basic interface resembles most of the other e-mail programs in this roundup, with multiple panes, including message preview, folders in an Explorerlike display, and toolbars for quick options. Here and there, details reveal a lack of polish, for example, folders are labeled by using their complete directory path, which is confusing and ungainly. There are also a number of places where seldom-used maintenance options appear as prominently as things you use every day, which adds to visual clutter and possible confusion.

Support for the store-and-retrieve capability in both POP3 and IMAP-4 servers gives Embla good control over online/offline



TeamWARE's Embla 2.0 has a simple user interface, but lacks support for important features like HTML.

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CIRCLE NUMBER 65



Features Comparison

INTERNET E-MAIL CLIENTS

PRODUCT	BeyondMail Professional 3.0	Calypso 2.2	Claris Em@iler 2.0	email 97	Embla 2.0 Plus
Publisher	Banyan Systems/ Coordinate.com	Micro Computer Systems Inc.	Claris Corp.	E Corp.	TeamWARE Group
Price	\$69	\$59.95	\$59.95	\$59.97	\$49
Phone	(800) 567-8818	(972) 659-1514	(800) 544-8554	(412) 921-2900	(408) 432-1300
URL	http://www. coordinate.com	http://www. mcsdallas.com	http://www. claris.com	http://www. e-corp.com	http://www. teamw.com
E-Mail	None	info@mcsdallas.com	clariscr@aol.com	info@e-corp.com	teamware@ossi.com
Platforms	Windows 95/NT	Windows 95/NT	Macintosh (Windows beta)	Windows 95/NT	Windows 95/NT
Distribution format	Download	Download	Download	Download, CD	Floppy
MAIN FEATURES					
Multiple users and/or Mail addresses	Yes	Yes	Yes	Yes	No
Offline work support	Yes	Yes	Yes	Yes	Yes
Select incoming mail	Yes	Yes	No	Yes	No
Address book import/ export	Yes/Yes	Yes/Yes	Yes/Yes	Yes/Yes	No/No
Address capture	Yes	Yes	Yes	Yes	Yes
Mail forms/templates	Yes/Yes	No/Yes	No/No	No/Yes	No/Yes
HTML mail support	Yes	No	No	No	No
Spell checker	Yes	Yes	Yes	Yes	Yes
Filtering (inbox/outbox)	Yes/Yes	Yes/Yes	Yes/Yes	Yes/No	No/No
Attachment viewing	Yes	Yes	No	Yes	Yes
Message threading	Yes	No	No	No	No
Live URL links	Yes	Yes	No	Yes	No
PROTOCOLS & SERVICES					
Other mail protocols	None	None	AOL, AppleLink, Claris OfficeMail, CompuServe, RadioMail	None	None
Mail servers supported	SMTP/POP3	SMTP/POP3, IMAP-4	SMTP/POP3	SMTP/POP3, IMAP-4	SMTP/POP3, IMAP-4
MIME/uencode/BinHex	Yes/Yes/Yes	Yes/Yes/Yes	Encode/Yes/Yes	Yes/Yes/No	Yes/Yes/No
LDAP	No	No	No	Yes	No
vCARD	No	No	No	Yes	No
Digital signature	No	No	No	No	No
Transmit compressed	No	No	Yes	Yes	No
Encryption	Proprietary	None	None	Blowfish, PGP built in	None
OTHER					
Printed manual	Yes	No	Yes	Yes	Yes
Wizards	Yes	Yes	No	Yes	Yes
Extras	ActiveX	Wireless version avail.		Pager messages	

messaging. Embla uses a Send Queue to indicate messages that are awaiting transmission. While other programs offer similar features, Embla's approach makes it more explicit and easier to manage.

We were quite surprised to find that this product, which supports some advanced features like IMAP-4, doesn't support any form of mail filtering. You can create any number of folders to store messages, but the messages have to be moved around manually (by drag and drop).

The address book stores only name, e-mail address, and comment. There is no address import or export. Taking addresses from

e-mail is not fully automatic, but you can have an address transferred. Embla does not support LDAP directories.

The message editor is essentially a straightforward text editor, although it does support rich text (but not HTML). You can also create templates for repeated messages; these can be made in other programs like a word processor. Embla does not support the newer forms of e-mail security such as S/MIME or other encryption.

The omission of filters and various security technologies puts Embla at a disadvantage. It's a nice program as far as it goes, but unfortunately it's only about half-way to its major competitors.

Eudora Pro 3.0	Netscape Messenger	Outlook Express	Pegasus Mail	Pronto97 Version 4.5	QuickMail Pro 1.5	Z-Mail Pro 6.1
Qualcomm Inc.	Netscape Communications Corp.	Microsoft Corp.	Pegasus Mail Systems Inc.	CommTouch Software Inc.	CE Software Inc.	NetManage Inc.
\$89	Bundled, Communicator (\$59)	Bundled, IE 4.0 (free)	Shareware	\$59	\$69.95	\$79
(800) 238-3672	(415) 937-3777	(800) 426-9400	None	(408) 245-8682	(800) 523-7638	(408) 973-7171
http://www.eudora.com	http://www.netscape.com	http://www.microsoft.com	http://www.pegasus.usa.com	http://www.commtouch.com	http://www.cesoft.com	http://www.netmanage.com
info@qualcomm.com	personal@netscape.com	info@microsoft.com	orders@pmail.gen.nz	pronto@commtouch.com	feedback@cesoft.com	info@netmanage.com
Macintosh; Windows 95/NT	Macintosh; Windows 95/NT	Windows 95/NT	Windows 95/NT	Windows 95/NT	Macintosh; Windows 95/NT	Windows 95/NT; Unix
Download, CD	Download	Download	Download	Download, CD	Download, CD	Download
Yes	Yes	Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes	No	Yes
No/No	Yes/No	Yes/Yes	Yes/Yes	Yes/No	Yes/Yes	No/No
Yes	Yes	Yes	Yes	Yes	Yes	Yes
No/Yes	No/Yes	No/Yes	No/Yes	No/No	No/Yes	No/Yes
No	Yes	Yes	No	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes	Yes	Yes
Yes/Yes	Yes/No	Yes/No	Yes/Yes	Yes/Yes	Yes/No	Yes/No
Plug-In	Yes	Yes	Yes	Yes	Yes	Yes
No	Yes	Yes	Noteboards	No	No	No
Yes	Yes	Yes	No	Yes	Yes	Yes
MAPI	None	MAPI	MHS	MAPI	None	MAPI
SMTP/POP3	SMTP/POP3, IMAP-4	SMTP/POP3, IMAP-4	SMTP/POP3	SMTP/POP3, IMAP-4	SMTP/POP3	SMTP/POP3, IMAP-4
Yes/Yes/Yes	Yes/Yes/Receive	Yes/Yes/Receive	Yes/Yes/Yes	Yes/Yes/No	Yes/Yes/Yes	Yes/Yes/No
No	Yes	Yes	No	No	Yes (plug-in)	No
No	Yes	Yes	No	No	No	No
No	Yes	Yes	Yes	No	No	No
Plug-In	No	No	No	Yes	No	Yes
PGP plug-in	S/MIME	S/MIME	None	None	None	DES 40
Yes	No	No	Yes	No	Yes	No
No	Yes	Yes	No	Yes	Yes	No
Productivity toolkit	Communicator	Internet Explorer		Anti-Virus Check	Ph and Finger	Newsreader

Eudora Pro 3.0

QUALCOMM INC.

One of the Internet's first and best known e-mail programs, Qualcomm's Eudora Pro 3.0 has added some new features like support for multiple e-mail accounts that keep it competitive, but we were disappointed by the lack of support for new standards and certain inadequacies in the user interface.

Eudora's functional (if not pretty) user interface is essentially a two-pane display with a hierarchical icon/folder list on the left and everything else on the right. With both Microsoft and Netscape throwing their most advanced interface design into their mail clients, Eudora's lack of features such as a message preview highlights its aging interface. It also has some relatively convoluted operations, like building a group, which require too many buttons and keystrokes.

For managing messages, Eudora works equally well online or offline and gives you control over the disposition of messages on

the server. It does not, however, support IMAP-4, which limits the use of shared server resources. Eudora supports automatic filtering of the inbox and outbox, plus filtering on demand. The long list of action options include leaving or deleting messages on the server, and you can stack up to five actions in a sequence.

The address book is minimal in content, has no import/export capability, and can be confusing to learn. Eudora supports the Internet Ph and Finger directory services, but not LDAP.

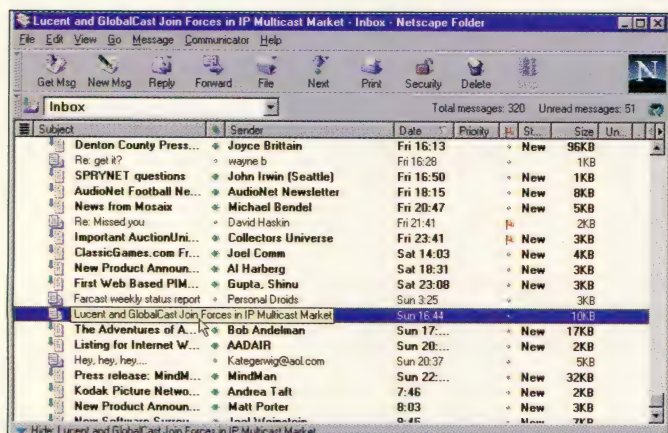
Eudora has its own approach to formatted text, but this seems unlikely to set the standard against the richer HTML. For message enhancement, Eudora is big on plug-ins, such as the PureVoice plug-in for voice recordings attached to messages. Plug-ins, such as PGP Personal Privacy, also provide most of Eudora's security.

Qualcomm has thrown in a free Productivity Toolkit including McAfee AntiVirus, PGP Personal Privacy 5.0, Alladin Stuffit, and Verity's KeyView. We wish it had done more within the program itself. This is still one of the more detailed and feature-rich e-mail programs, but with the field moving so fast, Eudora Pro needs a facelift and support for new standards—pronto.

Netscape Messenger

NETSCAPE COMMUNICATIONS CORP.

As a key component of a tool suite designed to capture the hard-core corporate Internet/intranet market, Netscape Messenger clearly has high aspirations. The program is robust and scalable; it supports all the newest standards and advanced features (though lacking somewhat on filtering); in particular, its message-finding prowess is without peer.



The auto-expanded display for long Subject lines is just one of Messenger's many nice interface touches.

Messenger is efficient and easy to use, with loads of nice touches. For example, it resolves the debate over a two- or three-pane interface scheme: You can display message contents in a preview pane on Messenger's main screen or turn off that display, in which case messages appear in separate windows. There's even a Thread button to organize headers into message threads.

Netscape addresses the needs of mobile workers in a smooth scheme for working offline. Where the incoming mail server supports IMAP-4, users can grab headers and mark desired messages for subsequent download when either beginning or ending an online session. Going on- or offline is a simple menu choice.

Messenger's filtering capabilities are so-so. Building rules is simple and intuitive; Even rules with multiple criteria (if Subject contains X and Date is between Y and Z...) take only seconds, but complex BeyondMail-style actions aren't available here.

Message searching, though, is one of this product's fortes. The Search Messages dialog lets you build complex search criteria with a few mouse clicks. The engine then blazes through messages—a folder at a time or your entire mail store in one shot.

The Address Book is flexible and easy to use; the vCard system is fully supported. Messenger comes configured with several LDAP directories for Web-based searches; you can add others.

Messenger lacks templates but it is fully HTML-enabled, and the HTML Composer has a full range of features. Security is another strength: Messenger fully supports S/MIME and has links to the VeriSign Web site where you can get a free-trial certificate.

It doesn't have templates or plug-ins, and its range of automated actions is narrower than some of the competition, but Messenger looks and feels like an industrial-strength mail client that will serve the needs of 99 percent of serious mail users.

Outlook Express

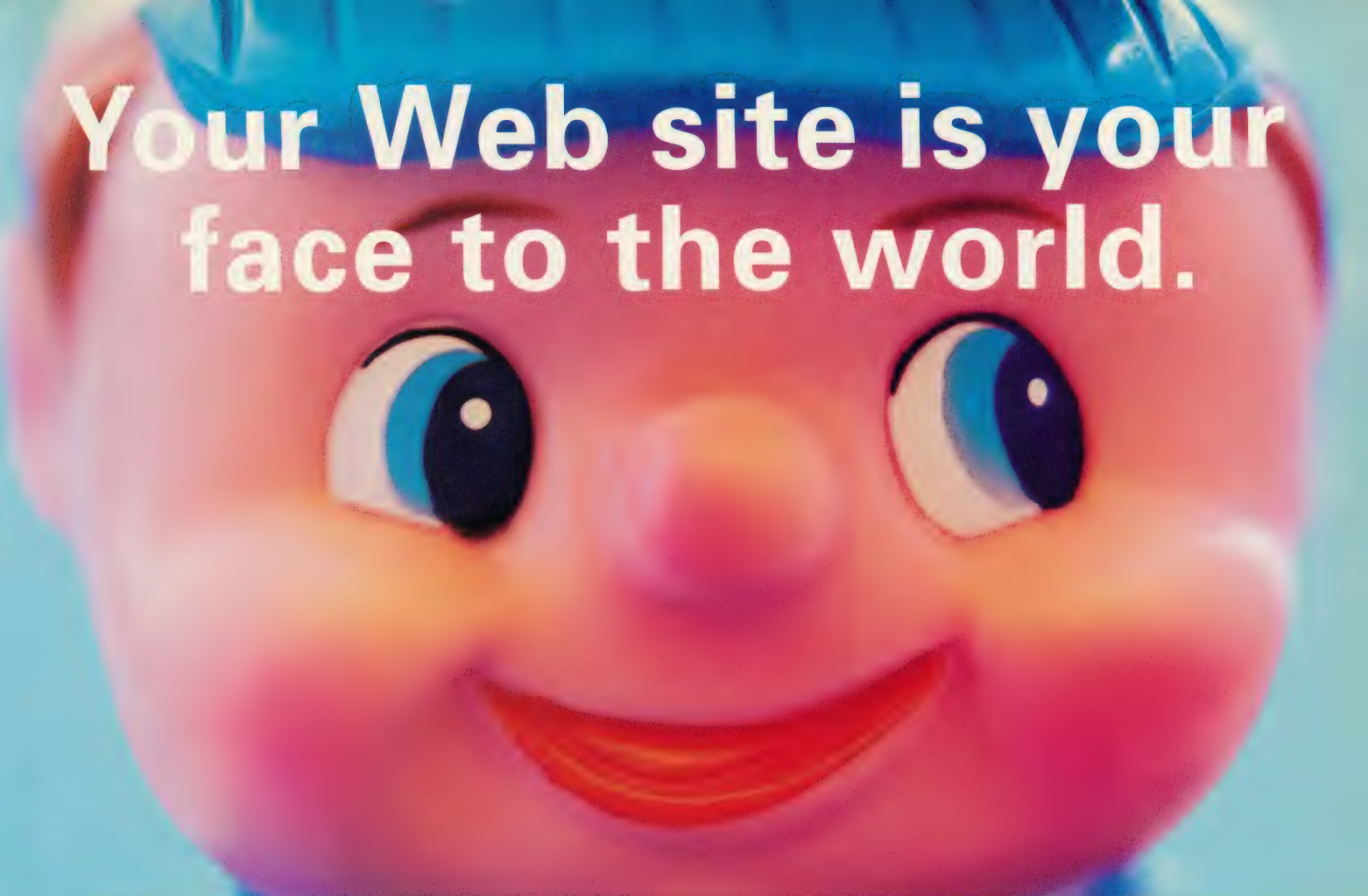
MICROSOFT CORP.

Yes, it's free, but Microsoft's new Outlook Express (bundled with Internet Explorer 4.0) is an outstanding value for other reasons as well. Start with the incorporation of many important new standards: IMAP-4, LDAP, S/MIME, HTML, and vCard. These not only provide a strong basis for the future, but also add many potent new features. Then there are the little things, the details of a well designed user interface that make it easy to use even for people unfamiliar with e-mail. Outlook Express is nicely balanced between simplicity and advanced features and should appeal to a wide audience.

As it installs, Outlook Express does an excellent job of recognizing and using configurations from other e-mail programs and existing Internet mail connections. There's also an Internet Connection Wizard to guide you through brand new installations.

Drag and drop of messages from multiple panes—including a preview pane—to the folder list is smooth.

The ability to create message filters specific to an account is an important feature (Outlook Express supports multiple accounts and e-mail addresses). However, filters are applied only to incoming messages. Nor are the action options as sophisticated as those provided by Eudora Pro and BeyondMail. On the plus side, we particularly liked the filtering based on message size, which makes it possible to leave huge files on the server until you're ready for them. Outlook Express also supports server-based rules that let you, for example, delete junk mail while it's still on the server.



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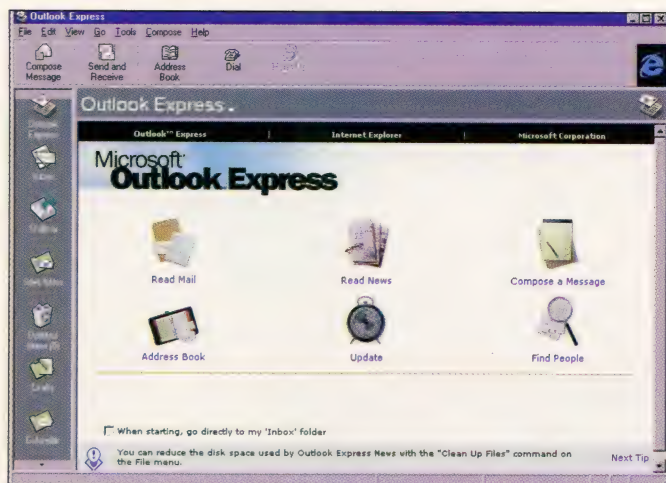
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CIRCLE NUMBER 53



The well-crafted interface and ease of use are some of Microsoft Outlook Express' greatest strengths.

The Find People button in Outlook Express doesn't just refer to its own address book; you also can access LDAP directories such as Four11 to locate addresses. The address book contains a wealth of contact information, and addresses can be added to it automatically—although only when you reply to a message.

Outlook Express is Microsoft's proof that HTML messages are not only effective, but easy. You can incorporate lots of HTML decoration without an HTML tag in sight. Designer stationery is also available (via templates). As for security, Microsoft has been generous in adding up-to-date security and privacy features, including support for S/MIME encryption and digital signatures.

This is an aggressively positioned product: It's free, loaded with features, and integrated with Internet Explorer. The polish on Outlook Express is a tip-off to Microsoft's belief in the importance of Internet e-mail. This is an excellent program for Windows users, worthy of a prime spot in the Start menu.

Pegasus Mail

PEGASUS MAIL SYSTEMS INC.

David Harris' Pegasus Mail has been around for a number of years, and it has the polish and depth of features to show for it, including support for Novell networks and some excellent filtering capabilities. Pegasus Mail isn't the snazziest program in this roundup, but as shareware (you pay only for manuals, if you want them), it has a lot to offer.

Pegasus has many features and options buried in menus and cascading windows. As a result, configuration can take a while, even though basic setup is easy. It could use some newer Windows 95 devices like tabs for option dialog boxes and a preview pane for messages. Still, once you learn where things are, it's easy to use.

Pegasus is a full Internet mail client that maintains a long-standing relationship with Novell NetWare LANs, including support for MHS. This could be a decisive factor for some organizations. Its

support for offline work and shared resources is quite good even though this is not an IMAP-4-enabled program.

The filtering capability is one of its strongest features. Rules can be applied to incoming and read mail, mail you create, and to entire folders. There is also a unique feature called "noticeboards," which are message folders available to other people on a LAN. This makes it easy to develop conversation threads by creating a filter that posts relevant messages to a noticeboard.

There's nothing fancy about the Pegasus address book, but you can have several, and they contain enough information to make them useful for contact management. To group several addresses, you can create distribution lists, which are text-file supplements. It does not support LDAP directory access.

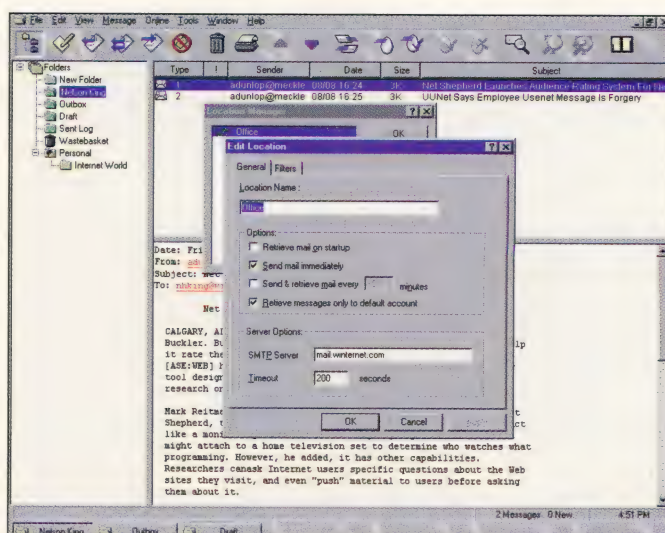
There's also nothing fancy about creating messages in Pegasus; it has a simple text editor and handles MIME enclosures with aplomb. Messages can be encrypted and digital signatures are available.

It doesn't have the newest interface nor all the latest protocols, but Pegasus Mail offers an excellent set of features. It's one of the few shareware programs to find acceptance in corporate settings, which says a great deal about its quality and usefulness.

Pronto97 Version 4.5

COMMTOUCH SOFTWARE INC.

A truly innovative user interface and support for major new standards (IMAP-4, HTML messages) make Pronto97 an attractive choice. A wallpaper background and arty toolbar buttons give the program a designer look, and innovations like a taskbar for messages and folders make it both visually interesting and easy to use. We liked the way Pronto97 handles multiple users (as accounts) with multiple addresses and that you can define locations with custom filters for each.



Pronto97 from CommTouch Software has strong support for on-server mail management, using IMAP-4.

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Uniquely, Pronto97 makes a distinction between *filters* applied to a location (which control messages on a mail server) and *rules* (which are applied to incoming or outgoing messages), thus clarifying the role of the mail server. For constructing rules, Pronto's capability falls short of such leaders as Eudora and BeyondMail, but should be adequate for users with moderate message traffic.

Pronto97 does not support LDAP directory access, but it is address-aware and will automatically highlight addresses in a message. We particularly liked its ability to select one of these addresses and either add it to the book or start a new message.

With Pronto, you can create message contents as plain text or as HTML. The HTML capability doesn't have many decorative options (such as line drawing), but it does offer built-in voice-mail recording.

Pronto's virus-checker for e-mail messages makes a lot of sense; we wish more products had it. Alas, security for message content is lacking; there's no support for encryption or digital signatures.

Just a year ago, Pronto96 stole the lead on the competition with the introduction of IMAP-4 server features, HTML messages, and multiple accounts/locations. These remain valuable features, but some of the competition (notably, Microsoft and Netscape) have moved further ahead with support for standards like LDAP and vCard. Nevertheless, among the stand-alone e-mail programs, Pronto97 remains one of the best.

QuickMail Pro 1.5

C E S O F T W A R E I N C .

Of QuickMail Pro's many strengths, perhaps the greatest is its simplicity. The Account Wizard, for example, shields users from set-up worries: Answer a few questions and it handles most configuration options and addresses automatically. The defaults work just fine for most users and the entire set-up process takes just a few minutes. From the opening screen you can opt to work online or offline and preference selections let you coordinate locally stored messages with those on the server. The price paid for simplicity is most apparent in message management. Messages and folders are displayed in a single column without nesting. This is simple, but those who rely on folders spend half their time scrolling the single message list. Also, you can't reply to or forward a message without opening it first.

While QuickMail's filtering interface is easy to use, it is, again, somewhat limited. You can base rules on multiple header fields, but filtering criteria are limited to *Contains* and *Does not contain*. Actions are restricted to *Forward*, *File*, *Delete*, and *Reply*. Complex actions, like Eudora's ability to modify Subject lines and priorities, are missing. There is no automatic outgoing-message filtering.

Attachment support is robust, including graphics, sound, video, spreadsheets, and so on. One particularly nice feature is the ability to record in the address book the preferred encoding type for each mail recipient; great if you often send to mailing lists with users on different systems. Also included are plug-ins for LDAP, Ph, and Finger directory services, accessible from within an address book.

QuickMail Pro supports live URLs. You also get a dozen or so forms (based largely on the proprietary graphics format

visible only to other QuickMail users) and can create your own forms. Those who run e-mail continuously in the background will appreciate MailTicker, which scrolls senders and subjects of inbox messages across the screen; a handy feature, especially since you can open or peek at messages by clicking the scrolling headers. While sophisticated users may find QuickMail's limited filtering and message management disappointing, less-demanding users will find its simplicity a positive virtue.

Z-Mail Pro 6.1

N E T M A N A G E I N C .

NetManage's Z-Mail Pro 6.1 is a solid e-mail product with a wealth of extra features, but much of what's unique about Z-Mail depends on synergy with other NetManage products and other Z-Mail users. Installing Z-Mail is quick, but full configuration takes a while: You'll spend considerable time chasing down Z-Mail's many options. The program also spawns a large number of subsidiary windows which can be distracting. Z-Mail could stand some modernization of its user interface, including the addition of a message-preview pane.

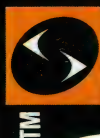
Given its background as a corporate e-mail tool, it's not surprising that support for IMAP-4 is a strong suit for Z-Mail. It takes full advantage of the client/server relationship with IMAP-4 servers, including shared files, directories, and application of filtering rules. Other features—such as a nifty phone message format called Phone Tag and a routing scheme that sends mail sequentially to a list of people—work only with other Z-Mail users.

The filtering capabilities are extensive and include a scripting editor that allows advanced users to program a succession of rules and actions for messages. We wish, however, that the rules could be applied to more than incoming messages. Z-Mail's address book is minimal, storing e-mail addresses only and making no provision for automatic address entry. This spartan approach is mitigated by the expectation that users will integrate the address book with NetManage's Ecco Pro personal information manager. The next version of Z-Mail, which just missed our deadline, will support LDAP directories and promises a major overhaul of the address book.

You can create messages and message templates in either plain text or HTML. The handling of file attachments is notable as Z-Mail supports not only MIME but also FTP, ZIP, and password-secured files. The ability to attach a personal icon (such as your mug shot or company logo) is a nice touch, although, once again, it requires other Z-Mail users to appreciate it. For security, messages can be encrypted, and this is one of the few programs that logs message traffic.

Z-Mail Pro doesn't support quite as many protocols as Netscape Messenger or Microsoft Outlook Express, nor is its user interface as up to date—but it's close. In a situation where you're sure to be sending messages to other Z-Mail Pro users, this program has a number of unique features that make it well worth consideration. ■

Nelson King is a contributing editor to Internet World. Kevin Reichard, Phil Rose, and Ted Stevenson contributed reviews.



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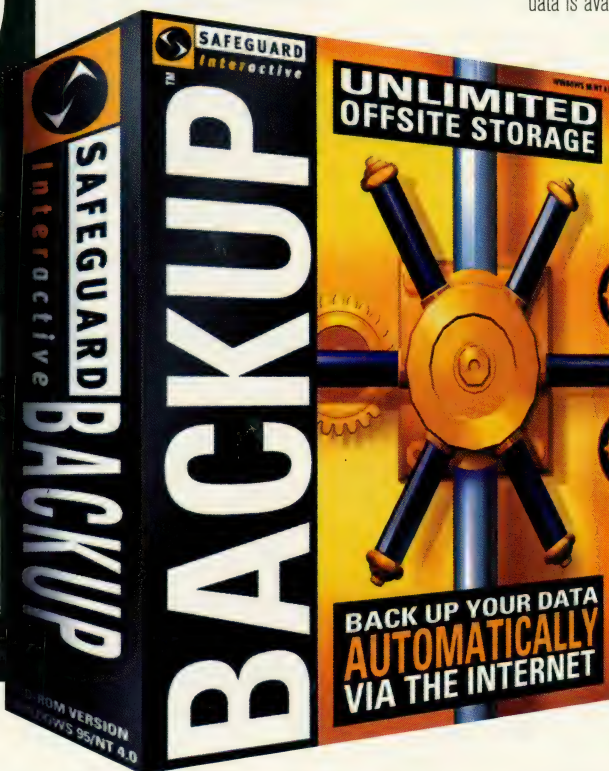
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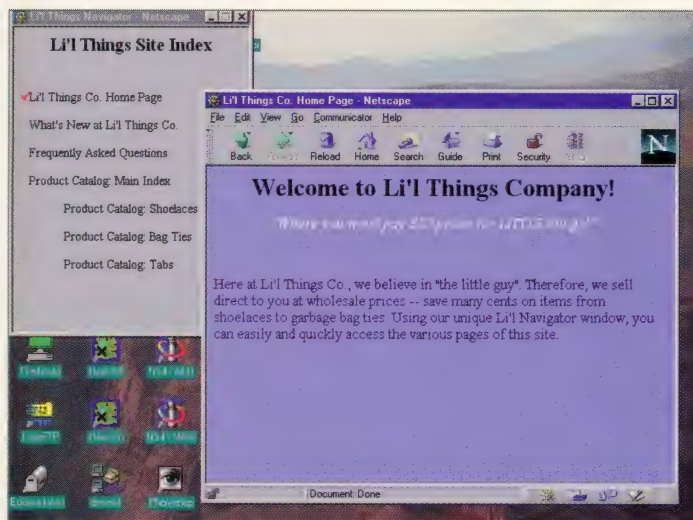
Pop-Up Goes the Window

Give Web-site users some in-your-face info. BY AARON WEISS

The “pop up” is a programming technique with a long and reliable history. Even the earliest graphical user interfaces (GUIs)—such as the Macintosh circa 1984 and the innovative Amiga operating system—employed message windows that “popped” onto the screen with caveats such as “Warning: Error code—43212!”

The Web, however, has been slow to embrace pop-up windows, but with this month’s column we hope to change all that. We’re going to look at two types of JavaScript pop-up windows: the remote-navigation window and the simple but impressive “glossary” window.

Consider these examples as guidelines. You’re welcome to copy the code verbatim (see <http://www.iw.com>), but because JavaScript is constantly changing in relation to its support by various browsers, it may be more valuable for you to adapt these ideas to the types of pop-up windows you’d like to create. The best examples are tailored for Netscape Navigator 4.0, which offers optimum support. You may need to scale down your ambitions for Netscape 3.0 and particularly for Microsoft Internet Explorer 3.0, whose support for JavaScript is rather



Screen 1: A pop-up window makes it easier to navigate the Li'l Things Co. Web site. The GIF checkmark confirms which page is on display; links are indented with a simple `<BLOCKQUOTE>` command.

shaky. Explorer 4.0 has much-improved JavaScript support and should work with these examples, save for minor performance tweaks.

A browser’s Back and Forward buttons are inadequate for navigating most Web

sites. The remote-navigation window can provide a user with a clear, maplike route through your site. Screen 1 shows how a basic navigation window helps the Web site for the fictional Li'l Things Co. become easier to handle.

When the user first connects to the Li'l Things home page, the navigation window pops up. Using this window, the user can click to any page in the site. And unlike frames, the navigation window does not steal precious space from the main window. You can also add luxuries such as a “You are Here” pointer.

Since the Li'l Things home page is responsible for launching the navigation window, it needs

to contain the JavaScript code to create it. Once the window has been created, it is a self-contained HTML document and can exist without the home page remaining open. If we plan to have any JavaScript-created options for the navigation window (such as the “You Are

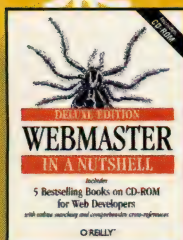
EXAMPLE 1: SETTING UP THE SITE MAP FOR THE NAVIGATION WINDOW

```
numpages=7; //total number of pages in site
sitelink=new Array(numpages)
for (j=0;j<numpages;j++)
{ sitelink[j]=new navlink("", "", 0) }

//setup properties for each navlink object
sitelink[0].name="Li'l Things Co. Home Page"
sitelink[0].url="lilhome.html"
sitelink[0].child=0
sitelink[1].name="What's New at Li'l Things Co."
sitelink[1].url="lilnew.html"
sitelink[1].child=0
sitelink[2].name="Frequently Asked Questions"
sitelink[2].url="lilfaq.html"
sitelink[2].child=0
```

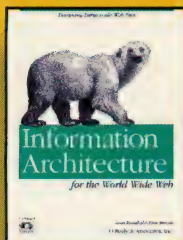
```
sitelink[3].name="Product Catalog: Main Index"
sitelink[3].url="lilcatmain.html"
sitelink[3].child=0
sitelink[4].name="Product Catalog: Shoelaces"
sitelink[4].url="lilcatlaces.html"
sitelink[4].child=1
sitelink[5].name="Product Catalog: Bag Ties"
sitelink[5].url="lilcatties.html"
sitelink[5].child=1
sitelink[6].name="Product Catalog: Tabs"
sitelink[6].url="lilcattabs.html"
sitelink[6].child=1
```


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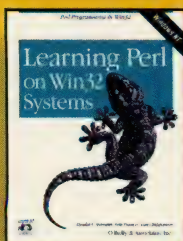
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Tricks with Scripts

Here" pointer), they must be scripted within the navigation window by the home page.

First, the JavaScript within the home page needs to set up the site map. To make this script adaptable to other sites, we create a new JavaScript object, named `navlink`, which contains three properties: `name` (the descriptive text for the link), `url` (the actual URL), and `child` (the child level for the link).

Looking at Screen 1, you can see that the three bottom "Product Catalog" links are children of the "Product Catalog: Main Index" link because they are indented. Each of those child links would be assigned a child level of 1, via the `child` property. The function `navlink()` is called upon later when we need to create the `navlink` object:

```
function navlink (name,url,child)
{ //create object "navlink" which contains
  properties about each link
  this.name=name
  this.url=url
  this.child=child }
```

We still need to set up the site map, so we'll create an array, named `sitelink`, where in each element contains a `navlink` object

representing each link in the site map. Because we want this JavaScript to create global variables (which are understood within the JavaScript functions), we place the code in Example 1 before the `</HEAD>` tag but not within a function definition.

The first line in Example 1 sets the variable `numpages` to the number of links in the site map—in this case, seven. Next we create a new `sitelink` array and then, using a loop, we cycle through each element of the `sitelink` array and assign to it an empty `navlink` object.

Once the elements of the array have been set up with `navlink` objects, we can explicitly assign link information to each element, as seen in the remainder of Example 1. Esoteric as all this may seem, we've now created an internal JavaScript representation of the site map. In fact, it takes only one function to create the navigational window/site map. Within this function, which we call `popNav()`, we first open (or pop up) the new window, as seen in Example 2.

In this example, we use the `open()` method of the JavaScript window object to open a new, minimalist window containing no toolbars or user controls. Now

EXAMPLE 2: OPEN SESAME

```
function popNav()
{ //open remote navigational window
  navwin=window.open("", "Li'l_Navigator", "toolbar=no,location=
  no,directories=no,status=no,menubar=no,scrollbars=no,resizable=
  no,top=0,left=0,width=270,height=350")
  navwin.opener.name="mainwin"
  //output HTML to remote window
  navwin.document.open()
  navwin.document.write("<html><head><title>Li'l Things Navigator</title>")
  navwin.document.write("<scr>"+ipt language='JavaScript'> function check(n)
  { document.images[checkon].src='blank.gif';")
  navwin.document.write("document.images[n].src='check.gif';checkon=n }
  checkon=0 </scr>"+ipt>")
  navwin.document.write("</head><body link='black' vlink='black'>")
  navwin.document.write("<h2><center>Li'l Things Site Index</center></h2><br>")
  for (j=0;j<numpages;j++)
  { for (i=0;i<sitelink[j].child;i++)
    { navwin.document.write("<blockquote>")
      navwin.document.write("<img src='blank.gif' width=10 height=10 border=0>")
      navwin.document.write("<a href='"+sitelink[j].url+"' target='"+navwin.opener.name+"
      onClick='check("+j+")'>"+sitelink[j].name+"</a><p>")
      for (i=0;i<sitelink[j].child;i++)
      { navwin.document.write("</blockquote>")
        }
      navwin.document.close()
      navwin.document.images[0].src="check.gif"
    }
  }
```

EXAMPLE 3: POP-UP GLOSSARY

```
word=new Array()
word[0]="<b><i>Feng Shoe:</b></i> A
type of spiritual harmony rooted in
one's footwear. When your feng shoe
is high, you can be productive with
ease. Low feng shoe can lead to
corns."
word[1]="<b><i>Our factories:</b></i>
Located in the poorest regions of the
world, our factories help pay the way
for many struggling families."
word[2]="<b><i>Buckwheat
fiber:</b></i> From the 'heart' of the
buckwheat stalk, the fiber acts as its
'spinal cord,' channeling positive
energy throughout."
```

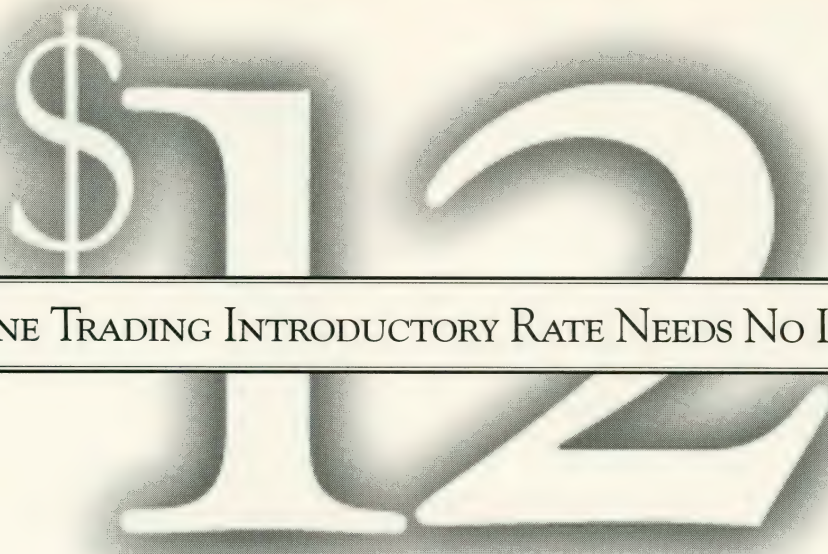
we must create a new HTML document in this window—a document representing the site map plus any JavaScript code that operates from within this window.

In the next several lines of Example 2, we begin to build the HTML document using the `write()` method. Of particular importance is the excerpt: `navwin.document.write("<scr>"+ipt...)`. We've split up the string `"<script>"` into two smaller strings because there is a strange bug in Netscape versions earlier than 4.0 that causes an error if you attempt to output `"<script>"` as one string. This same technique applies when we output the closing tag `"</scr>"+ipt>".`

In this example, we've also created a JavaScript function `check()` within the navigation window. This function will be used to graphically display a checkmark GIF beside the currently viewed page—the "You Are Here" feature. If you're adapting this navigation window example to Explorer 3.0, remember that it does not support the `image` object, and so this "You Are Here" feature is not possible using JavaScript alone.

The remainder of Example 2 continues to output HTML to the navigation window. A loop is set up to cycle for each link in the site map (represented by the variable `numpages`). Each hyperlink is indented child steps, where `child` reflects the child level of the link in the site map. In this example, we've used the `<BLOCKQUOTE>` tag for indenting because there is no cleaner way to indent HTML without using stylesheets.

After the indenting (if any), the hyperlink HTML is then created by outputting an `<A HREF>` tag to the navigation window. This tag points to the URL for the link in the site map and sets the `TARGET` attribute to the



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Tricks with Scripts

main browser window (mainwin). Also, because we're adding the "You Are Here" feature, an onClick event handler is added to the <A> tag that calls the check() function.

The second-to-last code line of Example 2 closes the output stream to the navigation window, effectively rendering all of the HTML. Don't confuse the document.close() method with the window.close() method—we're not closing the navigation window.

WEBSTER'S WISH

Convenient as hypertext may be, its implementation is often, well, inconvenient. Consider a Web page that contains many technical terms. Hypertext dogma has us linking these terms to definitions. Sounds OK, but if

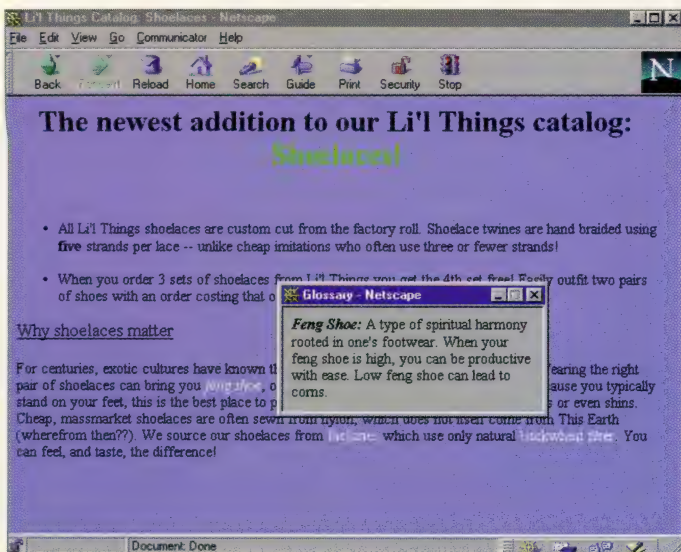
an array and filling each element with a string containing an HTML-formatted definition, as seen in Example 3.

Next, we need a single function to create the new window and display the definition. Just as with our navigation window example, we'll simply output some HTML to this new window, as shown in Example 4. The last code line in this example creates an

EXAMPLE 4: FRAMING THE GLOSSARY

```
function popdef(n)
{ defwin=window.open("", "Glossary", "toolbar=
no, location=no, directories=no, status=no, menubar=
no, scrollbars=no, resizable=no, width=250, height=120")
  defwin.document.open()

  defwin.document.write("<html><head><title>Glossary
</title></head><body>")
  defwin.document.write(word[n])
  defwin.document.write("</body></html>")
  defwin.document.close()
  clearInterval=defwin.setTimeout("self.close()", 5000)
}
```



Screen 2: A defining moment in Netscape 4.0—clicking on a hyperlinked term causes a dictionarylike reference to pop up nearby. In Netscape 3.0 or IE 3.0, the window pops up on the periphery, a less elegant solution.

the definition appears on another page, the wheel really starts to creak. We could display the definition in one frame while keeping the content in another, but this steals valuable browser real estate from the main content.

Enter the pop-up window. Looking at Screen 2, you'll notice three words near the bottom of the page, hyperlinked in white. Using this model, we can create pop-up glossary definitions for each word. The quality of our pop-up glossary depends on which browser we code for. If we code for Explorer or Netscape 3.0, the pop-up glossary window will not be located near the clicked hyperlink—functional, but lacking charm. Coding for Netscape 4.0, we can create a glossary that appears next to the cursor.

First, though, we must create the glossary definitions. This is a simple matter of creating

automatic shutdown that will close the pop-up glossary window after five seconds.

The popdef() function is triggered by a click on the hyperlinked word:

```
<a href=
""onClick=
"popdef(2);return
false">
buckwheat
fiber</a>. You can
feel, and taste, the
difference!
</font></p>
```

Here, the term "buckwheat fiber" is placed

within an <A HREF> tag, and the onClick event handler calls the JavaScript function

popdef(). The function call passes a parameter of value 2 because "buckwheat fiber" is definition No. 2 in the word array. The onClick event handler also returns a value of false to prevent the browser from actually attempting to follow the hyperlink.

The Netscape 4.0 version of Example 4, as seen in Example 5, allows the pop-up glossary to appear near the clicked hyperlink. The Netscape 4.0 version of the popdef() function is also slightly different:

```
<a href=""onClick="popdef(event,2);return
false">buckwheat fiber</a>. You can feel,
and taste, the difference!</font></p>
```

Using the Netscape version of this code, clicking on one of the hyperlinked words results in a neat pop-up glossary, as seen in Screen 2. These pop-up window examples are basic, but they'll encourage you to explore new ways to create windows on the fly. ■

Aaron Weiss is a freelance writer based in Canada.

EXAMPLE 5: GLOSSARY À LA NETSCAPE

```
function popdef(evt,n)
{ scrX=evt.screenX;scrY=evt.screenY
  defwin=window.open("", "Glossary", "toolbar=no, location=no, directories=
no, status=no, menubar=no, scrollbars=no, resizable=no, top=
"+(scrY-100)+" ,left="+ (scrX+25)+" ,width=250,height=50")
  defwin.document.open()

  defwin.document.write("<html><head><title>Glossary</title></head><body>")
  defwin.document.write(word[n])
  defwin.document.write("</body></html>")
  defwin.document.close()
  clearInterval=defwin.setTimeout("self.close()", 5000)
}
```


the net prophets

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Flash Dancing

Animate your pages without programming. BY WAYNE BREMSER

Macromedia's Flash is a vector-based graphics tool that creates tiny Shockwave files that can be used for anything from simple site navigation to full-screen animation. The authoring tool is moderately priced (around \$199) and you can download a free demo to test it out (<http://www.macromedia.com/software/flash>). The plug-in required for viewing by users is widely distributed and popular sites like MSN and Fox use it heavily. Flash also supports compressed audio.

Flash has several advantages over Java and JavaScript for interactive navigation. The most obvious is that files are quite small: The example we'll be working with is under 4K. Further, it loads as a single file rather than a group of small files, as with JavaScript, which cuts down on connection overhead regardless of overall size. The disadvantage of Flash is that it does require a plug-in.

Although you can create very elaborate effects with Flash (see <http://www.thing.net/~bullseye> for an example), for the purpose of demonstrating Flash basics we've put together a very simple example: The demo is set up in a dual-frame page; when you click a button in the navigation bar on the left, a corresponding Flash movie is loaded in the right frame (<http://www.beatthief.com/flash/demo>.

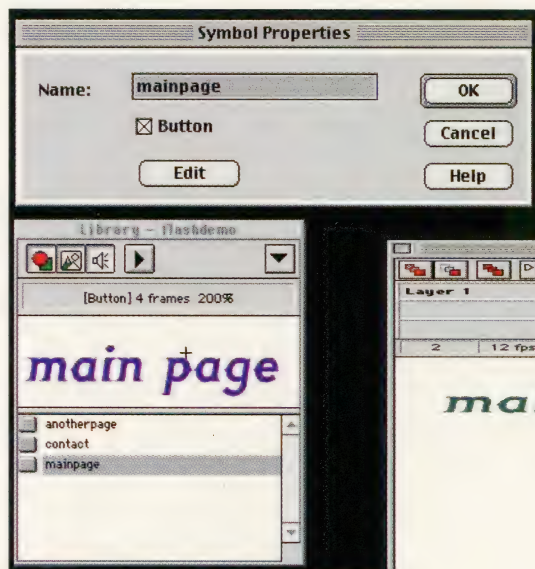


Figure 1. The text for the Main Page button displayed in the Library window's preview area. In the Symbol Properties dialog, it's defined as a button, given a name, and saved.

html). We suggest you download the raw Flash files that make up the example (Windows: <http://www.beatthief.com/flash/flashdemo.zip>; Mac: [/flashdemo.sit.hqx](http://www.beatthief.com/flash/flashdemo.sit.hqx)). You can study the process, step by step, working with the Flash files and the finished demo, then go on to create your own examples.

If you're experienced with Shockwave, you'll be able to find your way around Flash's interface. If not, you'll want to spend an hour or two with the interactive tutorials to get a handle on procedures.

Create a Button: Step one in our Flash project is creating a button. (The demo has three buttons; the procedure is exactly the same for each.) First, open the Library window (select Library from the

Window menu); then select Create Symbol from the Insert menu; this brings up the Symbol Properties dialog box shown in Figure 1. Click the *Button* checkbox (*Button behavior* in Windows); then name your button and click Edit.

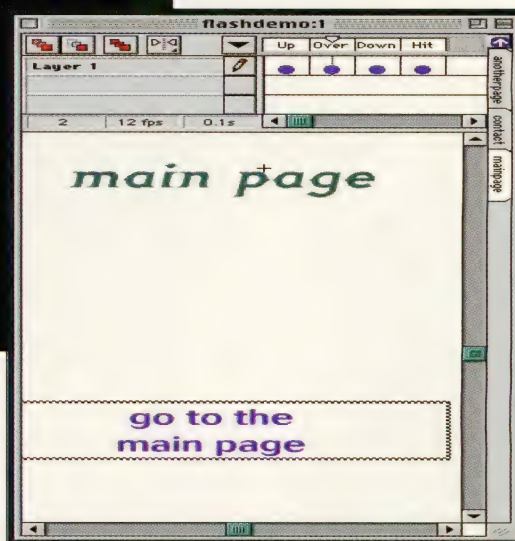


Figure 2. The gray pointer on the edit interface (at top) shows Over as the currently selected animation frame. In this frame, the text becomes green and an explanation pops up below the button.

Edit the Button: Editing a Flash navigation button consists of building four animation frames: *Up*, *Over*, *Down*, and *Hit*. The *Up* frame is how your button looks with no mouse interaction going on; *Over* is the button's look when the mouse passes over it; *Down* is its appearance when the mouse button is depressed; *Hit* defines the button's "hot" area that's sensitive to mouse interaction. Begin by inserting a frame (select Frame from the Insert menu), then a key frame (Insert-Key Frame). Key frames mark or define changes in an animation sequence. (In this example, each change in the button's state is a frame. While we're using text in our example, a button can also be a graphic

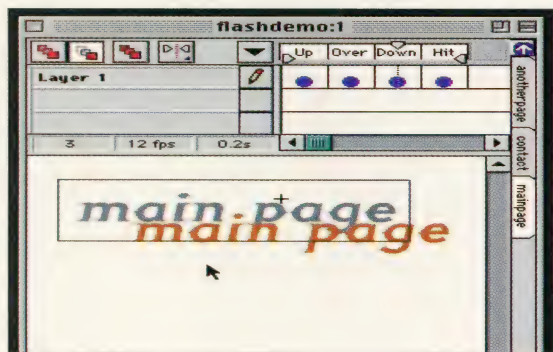
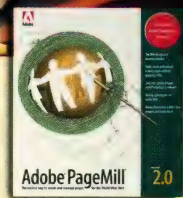


Figure 3. The Onion Skin tool aligns elements by superimposing a new, movable image over a fixed, existing one.



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CIRCLE NUMBER 75

HTML Workshop

element.) Key frames are represented by blue circles in the appropriate frame box, as shown in Figure 2. The active frame is indicated by a small pointer at the top of the

to green for the *Over* frame and from green to yellow for the *Down* frame. We've also added a navigation explanation to the bottom of *Over* and *Down*. To create the text, use Flash's Text tool and type the words into the main workspace. (It will then become visible in the Library dialog's preview pane.)

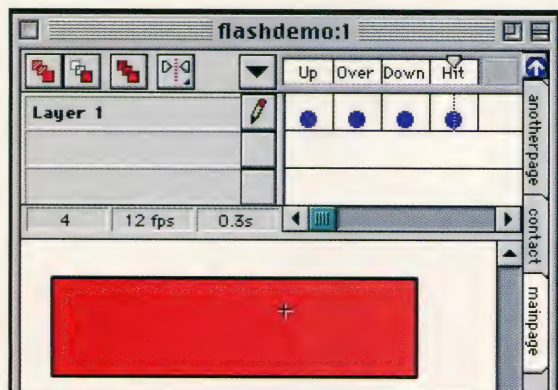


Figure 4. Users don't see the Hit frame, but Flash does. It can be any color, but it must be accurately aligned.

frame label (it's on the *Over* frame in the figure). To change the active frame, click the corresponding spot in the gray border over the appropriate frame box.

For the *Main Page* button, we'll make the text "main page" change color from blue

As you create the various frames, you'll need to pay close attention to the alignment of the text. Use the Onion Skin (positioning) tools to do this accurately (see

Figure 3, previous page).

The *Hit* frame (which is not visible to users) defines the area of the button that is sensitive to mouse interactions. For this demo, we simply created a red box (using Flash's drawing tools) that's roughly the

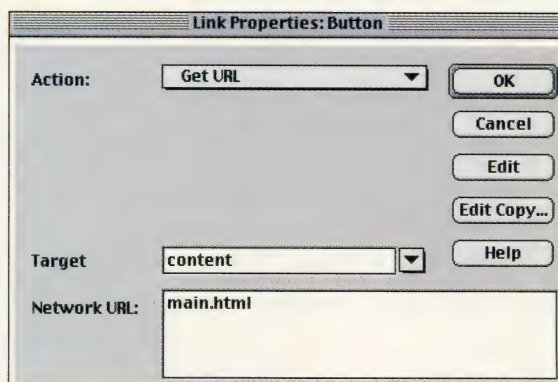


Figure 5. Link each button to a URL (main.html) and a Target (in this case the content frame of our Web page).

size and shape of the button text (see Figure 4). Here, too, the Onion Skin tool helped in sizing and aligning the box.

Lay It Out: Since there is no actual animation in our navigation bar (in the normal sense), there is only one frame in the "scene," but there are two layers: one containing the three text buttons and one with the gray-button background images.

Activate a New Layer: Select Layer from the Insert menu, name it Backgrounds, and draw your button images. Then return to the button layer (click the pencil icon). Now, select the desired button from the list in the Library dialog (the button contents will be displayed in the preview pane). Then drag the button from the preview pane to the appropriate place in the scene. Do this for each button. In our example, getting the descriptions in the *Over* and *Down* frames aligned properly over the gray background oval was tricky and required going back and editing the buttons to get it just right. To see your rollovers in action, select Enable Buttons from the Control menu.

Navigate: With the buttons laid out and working, we now have to add links so they'll actually do something on the Web. Disable the buttons (Control-Enable Buttons) and double-click one of the buttons. The Link Properties dialog box appears (see Figure 5). Select Get URL from the Action menu. There are spaces to enter the URL and its target. Since we're using frames, the *Main Page* button targets main.html in the Content frame. The other two buttons work the same way but, of course, with different text and targets. Save the finished file as Shockwave Flash and upload.

You're now well on your way to using Flash as a powerful tool for site navigation—and scene animation. ■

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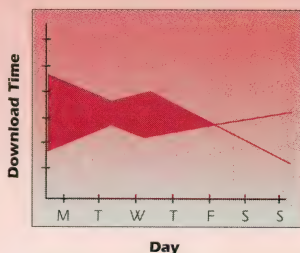
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CIRCLE NUMBER 147

Smooth-Talking Type

Vibrant 3-D text effects without special tools. **BY DAVID D. BUSCH**

Pictorial graphics get the lion's share of the attention at most Web sites, but inventive text treatments can add drama to any site, calling attention to important elements, reinforcing a visual style, and helping visitors navigate among hyperlinks. You can buy special utilities to create 3-D and other typographical effects, but your current image editor—from Adobe Photoshop to Fractal Design Painter—has everything you need to produce an array of graphical



Two different kinds of shadow effects are combined here—along with some other basic graphics techniques—into a spooky, dramatic look that works well for logos.

get washed out in the glow.) Then, select a bright color for the radiance effect. I used magenta, but bright yellow and red also look good.

your page background, the text will merge seamlessly.

DARK SHADOWS

The Effect: You'll probably want to use drop shadows and other shadowing effects on your page. The following technique uses two different tricks to produce an interesting typographical effect. The first one is good for logos but may be a bit too dramatic for normal Web-page headings.

The Recipe: Enter the text into a blank, transparent image layer and copy the text to the clipboard, as above. Next, paste it down onto a separate layer, flip it upside down, and fill with a dark shade (black works best). Then, use your image editor's perspective, distortion, or skewing tool to angle the shadow so it appears to have been cast by the original letters. I added a bit of blur to the shadow to give it a hazy look.

Paste down the text you have stored on the clipboard, fill it with black, and place it behind the main text, offsetting it slightly to produce a 3-D or drop-shadow effect. I polished off my image by putting it on a gradient background and fraying the edges a bit using Photoshop's Glass filter (applied only to the edges).

EASY NEON

The Effect: This one is so easy it ought to be illegal. You can create 3-D text that



The "radioactive" effect here looks terrific on a page with a black background, but works with any dark color. The eerie glow is produced by blurring a copy of the original type image.

gems. And you won't need step-by-step screen shots to understand how these work: They're quick and easy.

FALLOUT

The Effect: The "radioactive" type shown in the screen shot above looks sensational on a black background, but you can use any dark color. The eerie glowing text can be hard to read, so you'll want to save this haunting effect for logos, section headings, and other large graphics.

The Recipe: First, choose a thick, sans-serif font like the LCD font I selected. (Feathery typefaces with serifs don't work well for this effect as they tend to

Enter your text on a blank, transparent image layer, using the same color for this text that you plan to use for your page background. (It's also a good idea to choose a "browser safe" color; see Graphics Toolbox, Sept. '97 for details on color matching.) Immediately copy the text to the clipboard; you'll need this original version again in a bit. Next, select your editor's blurring effect to smear the working version of the text into a hazy shadow. You may have to experiment to find the right degree of blur. Once you've got the look right, fill the blur with the color you've selected for the glow. The precise method for doing this varies from

looks like it was created from bent tubing using your image editor's dodge/burn or lighten/darken brush. This effect is great for logos, headings, labels for buttons (or for the buttons themselves), and other display text on your page. Because the edges of the text produced using this

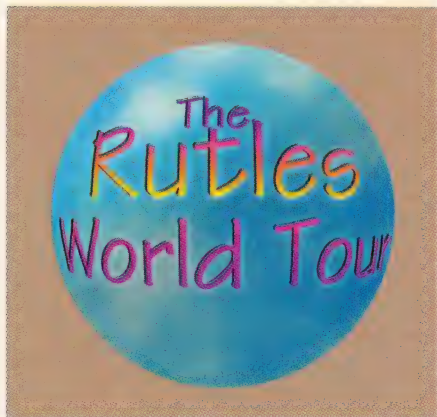
Tubular

A bold, sans-serif typeface, a bright, medium-hued color, and a couple of basic image-editing tools are all you need to create 3-D text with a neon-tube look.

technique are "hard," it works well for transparent GIFs that appear to float above your background.

The Recipe: You will need to select a sans-serif typeface. I chose VAG Rounded because it already has rounded ends that look good with a tubular effect. The key to the success of this effect is to use a medium-dark hue for your text color. Then, choose the lighten/darken tool in your image editor (in Photoshop it's the Toning tool, with dodge/burn/sponge as its variations) and pick a fuzzy brush that's about a third the width of the text.

To turn type into tubing, first darken the outer edges of the text using the darken tool. You don't have to be precise;



The Kai's PowerTools Glass Lens filter is an optional enhancement for this round button-style logo.

a little variation in your strokes makes the text look more organic and realistic. Then switch to the lighten tool and lighten the center of each stroke.

You'll achieve a convincing tubular effect before you know it.

WHIRLED TOUR

The Effect: Here's another text effect that lends itself to transparent-GIF treatment, as the text is framed by a circle that can serve as the focal point on your page or be squeezed down to form a spherical button. I enhanced this example using Kai's PowerTools, but you can get much the same look without any add-ons.

The Recipe: Create a circle in the center of your transparent image. Next, create a background for your button. The sky's the limit here: I filled the circle with clouds generated by Photoshop's Render:Clouds filter. You could also use a radial gradient, a patterned background pasted into the circle, or another interesting image. Additional horizontal and vertical lines

Metallic

Thanks to dual gradient fills, this text appears to be reflecting the sky and ground, suggesting a metallic sheen.

will show up as latitude and longitude lines, reinforcing the globe effect.

Next, use your image editor's Spherize (or equivalent) filter or, as I did, apply KPT's Glass Lens to convert the flat circle into a globe. Enter your text on a separate layer. I used the 3-D drop-shadow effect described earlier and colored the text with a gradient. Spherize the text to match the globe, merge the images, save as a transparent GIF, and you have text wrapped around a floating orb.

HOT METAL

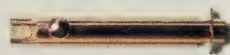
This 3-D type quickie (see Metallic example, above) takes on a mirrorlike look simply through the use of two gradients: blue-to-light brown for the top half of the text and light brown-to-dark brown on the bottom. It looks as if the text is reflecting the sky and ground. My image editor's Chrome filter gave the text the necessary sheen and specular highlights. ■

David D. Busch is a contributing editor to Internet World.

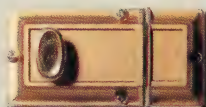
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CIRCLE NUMBER 121

Is Your Web Site PG—or X?

PICS standard helps rate controversial material. **BY KEVIN REICHARD**

Not all Web content is appropriate for every Web surfer—a fact that Webmasters and other Web administrators need to address, particularly with sites that have “adult” and “mature” themes. These themes are not restricted to hard-core pornography, but cover other areas such as nonexplicit sex, nudity, profanity, violence, and gambling. Many parents and legislators feel this type of content shouldn’t be available to impressionable children without some type of parental approval, and it is becoming an increasingly important issue as the Internet expands.

Some organizations, particularly those representing the religious right, are calling for regulation of the Internet—especially after the failure of the Communications Decency Act (CDA) to pass constitutional muster before the Supreme Court—so it’s imperative that the Internet become self-policing to prevent future attempts at censorship. While there are legitimate arguments as to the unique qualities of the Internet and the need to have totally unfettered access to information, the plain truth is that most people favor some sort of mechanism to prevent children from seeing adult-oriented Web material and are willing to let an outside authority control access if the Internet can’t police itself.

THE PICS STANDARD

Hence the introduction of the Platform for Internet Content Selection (PICS) standard from

the World Wide Web Consortium, or W3C (<http://www.w3.org/PICS>). PICS provides a potentially valuable mechanism for identifying objectionable Web content. Ratings can be voluntarily inserted into Web pages by an administrator or collected into ratings

files (ending in .RAT) that can be read by PICS-compatible software, including SurfWatch, Cyber Patrol, or Microsoft Internet Explorer 3.0/4.0.

The PICS standard does have some drawbacks, however; for one, registration of pages is left up to Webmasters and interested third parties, rather than a central authority. Similarly, definitions of “objectionable” content are set by individual rating services using the PICS standard, rather than a single group. An evangelistic organization, for instance, could come out with a rating system that’s considerably more restrictive than that of a more liberal group. And though many of the larger players in the Internet world—including Microsoft, IBM, and AltaVista—have announced support for PICS, widespread acceptance of the standard is still on the horizon.

As defined by the W3C, PICS-compatible ratings must meet the following criteria:

- Labels (such as meta tags) must be able to be transmitted in an HTML document, with a document transmitted in an RFC-822 format (e-mail, news, HTTP) or via an HTTP-based database query.
- PICS must not specify a particular labeling vocabulary, but rather support any labeling vocabulary.
- PICS must not be culturally biased, must support full internationalization, and be capable of significant localization.

SAFESURF RATING SYSTEM	
PROFANITY	
1) SUBTLE INNUENDO: Subtly implied through the use of slang	
2) EXPLICIT INNUENDO: Explicitly implied through the use of slang	
3) TECHNICAL REFERENCE: Dictionary, encyclopedic, news, technical references	
4) NONGRAPHIC-ARTISTIC: Limited nonsexual expletives used in an artistic fashion	
5) GRAPHIC-ARTISTIC: Nonsexual expletives used in an artistic fashion	
6) GRAPHIC: Limited use of expletives and obscene gestures	
7) DETAILED GRAPHIC: Casual use of expletives and obscene gestures	
8) EXPLICIT VULGARITY: Heavy use of vulgar language and obscene gestures. Unsupervised chatrooms.	
9) EXPLICIT AND CRUDE: Saturated with crude sexual references and gestures. Unsupervised chatrooms.	
HETEROSEXUAL AND HOMOSEXUAL THEMES	SEX, VIOLENCE, AND PROFANITY
1) SUBTLE INNUENDO	1) SUBTLE INNUENDO
2) EXPLICIT INNUENDO	2) EXPLICIT INNUENDO
3) TECHNICAL REFERENCE	3) TECHNICAL REFERENCE
4) NONGRAPHIC-ARTISTIC	4) NONGRAPHIC-ARTISTIC
5) GRAPHIC-ARTISTIC	5) GRAPHIC-ARTISTIC
6) GRAPHIC	6) GRAPHIC
7) DETAILED GRAPHIC	7) DETAILED GRAPHIC
8) EXPLICITLY GRAPHIC OR INVITING PARTICIPATION: Explicit descriptions of intimate details of sexual acts designed to arouse. Inviting interactive sexual participation. Unsupervised sexual chatrooms or Newsgroups.	8) EXPLICIT VULGARITY
9) EXPLICIT AND CRUDE OR EXPLICITLY INVITING PARTICIPATION: Profane graphic descriptions of intimate details of sexual acts designed to arouse. Inviting interactive sexual participation. Unsupervised sexual chatrooms or Newsgroups.	9) EXPLICIT AND CRUDE
GAMBLING	
	1) SUBTLE INNUENDO
	2) EXPLICIT INNUENDO
	3) TECHNICAL DISCUSSION
	4) NONGRAPHIC-ARTISTIC, ADVERTISING
	5) GRAPHIC-ARTISTIC, ADVERTISING
	6) SIMULATED GAMBLING
	7) REAL-LIFE GAMBLING WITHOUT STAKES
	8) ENCOURAGING INTERACTIVE REAL-LIFE PARTICIPATION WITH STAKES
	9) PROVIDING MEANS WITH STAKES

The SafeSurf system goes into explicit detail to allow Webmasters to define multiple levels of sex, violence, profanity, and gambling activity on their sites. Once the questionnaire is complete, SafeSurf returns a PICS-compliant rating meta tag for display on the site.

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PICS isn't the only rating standard out there, but right now it's the one with the most industry support. Solid Oak Software is offering an alternative that defines "adult" and "mature" Web sites but leaves the majority of sites without any definitions. You can check out the specs at <http://www.solidoak.com/vcr.htm>.

RATING YOUR OWN SITE

Anyone can create their own Web-site ratings using PICS standards—Net Shepherd (<http://www.netshepherd.com>), for instance, asks users to rate sites based on maturity levels. However, in this issue we'll highlight steps that you can take to create ratings for the two most popular services: the Recreational Software Advisory Council on the Internet (RSACi) and SafeSurf.

Webmasters begin the rating process by submitting information about their site to RSACi or SafeSurf. The rating service then generates a classification, in the form of a meta tag, that can be inserted into a Web page. This tag is used by a PICS-compatible Web browser or filtering program to provide or deny access to the page.

The RSACi process is quite simple. Point your Web browser to <http://www.rsac.org/register/index.asp>, where you can register individual pages, specific branches or directories on your server, or the entirety of any Web site. You're asked to fill out a questionnaire that provides specific definitions of content, which determines one or more content levels for your site. For instance, a section on nudity divides the levels into frontal nudity that "qualifies as a provocative display of nudity," frontal nudity in general, partial nudity, revealing attire, or none of the above. (For example, if you're administering a Web site for a mail-order firm that specializes in undergarments, you may want to choose "partial nudity" or "revealing attire.") These answers are, as you might surmise, highly subjective—especially when you're discussing criteria like intentional aggressive violence or hate speech.

At the end of the process, a PICS meta tag is created for you to copy and paste directly into the header of the Web site or a specific Web page; you're also asked to place a link to RSACi on your home

page, proclaiming that the site has been registered. (RSACi is the official rating site for IE.) A meta tag for a site with no objectionable content would look like this:

```
META http-equiv="PICS-label" content='(PICS-1.1
"http://www.rsac.org/
ratingsv01.html" I gen false
comment "RSACi North
America Server" by
"reichard@mr.net" for "http://
www.kreichard.com" on
"1997.08.04T08:54-0800" r (n 0
s 0 v 0 i 0))'
```

Wait a minute—why would you want to rate a site with no objectionable content? Because the goal is to rate every site, not just the sites with risqué material. Part of the PICS standard would disallow access to any site that hasn't been rated (this option is present in IE 3.0 and 4.0), which makes a lot of sense—otherwise, Webmasters could bypass the standard by not rating their sites. As PICS becomes a more widespread standard, you'll want to register every site you administer, even the squeaky-clean ones. But mass acceptance of PICS is still not a reality: RSACi says that 35,000 sites have been registered to date, just a drop in the bucket among the 50 million-plus Web sites.

The SafeSurf rating system (<http://www.safesurf.com>) is even more detailed than RSACi, providing multiple criteria (subtle innuendo, explicit innuendo, graphic-artistic, etc.) for a greater number of categories, including profanity, heterosexual

The RSACi system puts each questionnaire topic on a separate screen (above); it uses five levels to rate the parameters of objectionable Web-site content (below).

Internet gambling operations, SafeSurf made a smart move to include that category.

The mechanics of SafeSurf are similar to RSACi's. You're asked to rate a page, a section, or an entire Web site on the basis of its objectionable content. Once you've completed the questionnaire, SafeSurf generates a PICS-compliant meta tag for insertion in your site.

Other PICS rating systems worth checking out include the Microsystems PICS Service (http://www.microsys.com/pics/pics_msi.htm), from the makers of Cyber Patrol, and Adequate.com (<http://www.adequate.com/adequate/ratings>), which employs a rating system similar to the one used by television broadcasters (WebY for all audiences, WebY7 for children age 7 and up, and so on). One caveat about Microsystems: The company is attempting to push its proprietary software in place of Web browsers for access to Web ratings.

The W3C is working on several extensions to the PICS standard, which would incorporate PICS labels for digital signatures, copyrighted material, and personal demographic information. For now, though, PICS shows promise as a way to keep censorship at bay. ■

RSACi RATING SYSTEM				
	Violence Rating	Nudity Rating	Sex Rating	Language Rating
LEVEL 0	None of the above or sports-related	None of the above	None of the above or innocent kissing; romance	None of the above
LEVEL 1	Injury to human being	Revealing attire	Passionate kissing	Mild expletives
LEVEL 2	Destruction of realistic objects	Partial nudity	Clothed sexual touching	Moderate expletives or profanity
LEVEL 3	Aggressive violence or death to humans	Frontal nudity	Non-explicit sexual acts	Strong language or hate speech
LEVEL 4	Rape or wanton, gratuitous violence	Frontal nudity (qualifying as provocative display)	Explicit sexual acts or sex crimes	Crude, vulgar language or extreme hate speech

themes, homosexual themes, nudity, violence, glorifying drug use, and gambling. With all the recent debate about the legality (not to mention the social correctness) of

Kevin Reichard has written 20 books for MIS:Press, including *The Windows NT 4.0 Internet Server*.

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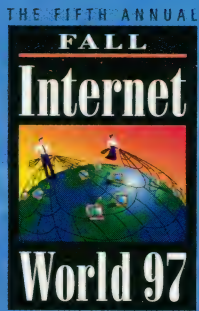
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Monday, December 8	10:00 AM - 5:30 PM
Tuesday, December 9	9:30 AM - 5:15 PM
Wednesday, December 10	9:00 AM - 5:30 PM
Thursday, December 11	9:00 AM - 5:30 PM
Friday, December 12	9:00 AM - 4:30 PM

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Thursday
December 11, 1997
1:15 PM – 2:00 PM

Michael Dell
Founder/Chairman
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Stephen M. Case
Chairman/CEO
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Wednesday,
December 10, 1997
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Lawrence J. Ellison
Chairman/CEO
Oracle Corporation

Larry Ellison has been CEO of Oracle Corporation since he founded the company in 1977. He has received numerous honors and awards, including Entrepreneur of the Year in 1990 from the Harvard School of Business.



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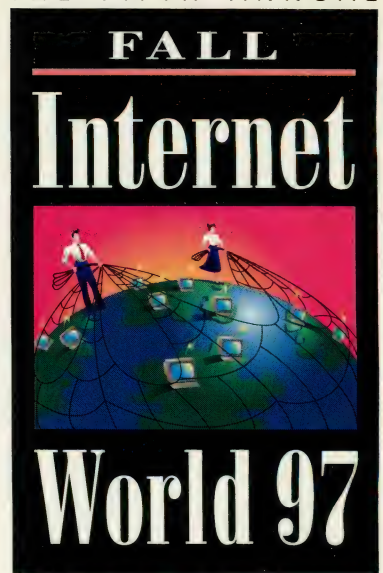
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Stork Site
Sun Microsystems
SuperLink Internet Services
Superscape
Sybase/PowerSoft
Symantec
Syracuse University - School of
Information
TAC Systems
TCG Cerfnet
TenFour US, Inc.
Tivoli Systems
TMSSequoia
Trilogy
TriTeal Corporation
Trusted Information Systems
Tumbleweed Software
TuneUp.Com
TVisions
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Ulead Systems Inc.
UMI
United States Postal Service
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UUNET Technologies
V-ONE Corporation
Van Nostrand Reinhold
Vasco Data Security, Inc.
VDOnet
VeriFone - Internet Commerce
Division

Verity, Inc.
Vicinity Corporation
Virtual Spin LLC
Virtual Wall Street
Visient
VisiNet
Vision Factory, Inc., The
VocalTec Inc.
Voice Internet Verification
Vosaic Corporation
Voxware, Inc.
VXtreme, Inc.
Wall Data
Warp Drive Networks
Wave Systems Corporation
WavePhone Incorporated
Wayfarer Communications
Web Dynamics, Inc.
WebConnect
WebFlow
WebPromote
WebXL
Well Engaged
WGI Web Site Promotion
Whistle Communications
White Pine Software
WhoWhere?, Inc.
Wiley Computer Publishing
Wolff New Media
Worldtalk Corporation
WSI/Intellicast
XcelNet, Inc.
Xyplex Networks
Yoyodyne Entertainment, Inc.
Zacks Investment Research
ZakSat General Trading Co.
Zapa Digital Arts
Ziff-Davis Publishing
ZZYZX Workstations & Peripherals



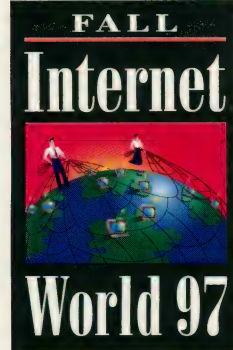
Exhibits: December 10-12
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EXHIBITS OPEN:

December 10: 10:00 AM - 6:00 PM
December 11: 10:00 AM - 6:00 PM
December 12: 10:00 AM - 4:00 PM

This form for exhibits admission only.
To register for conference sessions and
workshops use form on registration insert.

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1. Your Information: (please print)

☐ Mr. ☐ Ms. ☐ Dr.

First Name

Last Name

Title

Company

Street

Division

Mail Stop

City

State/Province

Zip/Postal Code

Country

Phone

Fax

E-mail

- ☐ N. Telecommunications
☐ P. Entertainment
☐ Q. Other (please specify)

4. SIZE OF YOUR ORGANIZATION: (check only one)

- ☐ A. 1-10 employees
☐ B. 11-100 employees
☐ C. 101-1,000 employees
☐ D. 1,001-10,000 employees
☐ E. Over 10,000 employees

5. INTERNET PRODUCT PURCHASING ROLE: (check only one)

- ☐ A. Final decision-maker
☐ B. Specify product or vendor
☐ C. Recommend product or vendor
☐ D. No decision-making responsibility

6. PRODUCT INTEREST: (check all that apply)

- ☐ A. Access
(T1/T3/Cable/ISDN/DSL)
☐ B. Web Page Authoring/Design
☐ C. Servers
☐ D. Operating Systems
☐ E. Security Products
☐ F. E-Commerce/Transaction
Software
☐ G. Web Multimedia
(Audio/Video/VRML, etc.)
☐ H. Network/Intranet
Hardware
☐ J. Network/Intranet Software
☐ K. Web Site Development/
Hosting Services
☐ L. Measurement Tools

- ☐ M. Content/Content Developers
☐ N. Databases/Personalization
☐ P. Internet Telephony
☐ Q. Other (please specify)

7. LEVEL OF RESPONSIBILITY IN MANAGING YOUR COMPANY'S WEB SITE: (check only one)

- ☐ A. Total
☐ B. Substantial
☐ C. Partial
☐ D. Minimal
☐ E. None

2. COMPANY'S PRIMARY BUSINESS:

- (check only one):
☐ A. ISP/Online Svc./Hosting/
Site Development
☐ B. Marketing/Advertising
☐ C. Media
☐ D. Computers/IT - Hardware
Manufacturer
☐ E. Computers/IT - Software
Developer
☐ F. Computers/IT - Retailer/
Reseller
☐ G. Finance/Banking/Insurance
☐ H. Government/Defense
☐ J. Healthcare
☐ K. Education
☐ L. Manufacturing
☐ M. Retail/Catalog

3. PRIMARY JOB FUNCTION (check only one):

- ☐ A. Web Site Development/
Management
☐ B. MIS, Network Admin.,
Other Computer Tech.
☐ C. Senior Mgmt. (CEO,
President, Owner, VP)
☐ D. Finance/Accounting
☐ E. Marketing/Sales
☐ F. Content (Editor, Artist, etc.)
☐ G. Other (please specify)

FALL Internet World 97

December 8-12, 1997
Jacob K. Javits Convention Center
New York, NY

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- Indicates highest rated speaker according to previous conference attendees.



- Indicates session attracts the largest Internet World audiences.

Only the highest rated speakers and sessions were retained for this year's program. All other speakers and sessions listed are new for 1997.

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at-a-glance

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Lawrence J. Ellison, Chairman/CEO, Oracle Corporationp. 4

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Workshop: Intranet Forum: DAY TWOp. 23

10:00 AM - 12:30 PM

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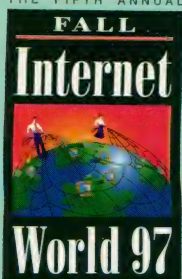
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Jacob K. Javits Convention Center
New York, NY

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Michael Dell, Founder/Chairman, Dell Computerp. 4

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at-a-glance

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Hands-On Workshops

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These intensive training sessions are each limited to 30 participants, two people per computer workstation. DON'T BE LEFT OUT! Hands-On Workshops must be registered for individually and are not included with the Passport.

Monday, December 8

H01 10:00 AM - 12:30 PM

H02 1:30 PM - 4:00 PM (repeat session)

Webmaster HTML Fundamentals

Learn how to use the Internet effectively and learn HTML programming techniques to help with interactive forms development. **Prerequisites:** Basic understanding of the Web and willingness to learn HTML programming techniques.

Audience: End users and technical management.

Overview: Fundamentals of a Webmaster Specialist. Learn the fundamentals of HTML and how to create web content. Analyze how to create market awareness of your products and services by creating static and informational web pages using HTML. Insert graphics, format your document and define links with other online documents. Understand how to improve customer service by creating interactive forms to solicit data from your customers using HTML tools and editors.

H02 is a repeat of H01.

Tuesday, December 9

H03 9:30 AM - 12:00 PM

H04 1:00 PM - 3:30 PM (repeat session)

Electronic Commerce Fundamentals

Understand how to install digital wallet software.

Audience: Executives and technical management.

Overview: Electronic transaction models including cash, check and credit. An overview of the Secure Electronic Transaction (SET) protocol will be presented and issues related to SET will be covered. Server software will include E-Cash and CyberCash.

H04 is a repeat of H03.

Wednesday, December 10

H05 10:00 AM - 12:30 PM

Web System Administration

Discover how to effectively administer and manage Web (Internet and intranet) server systems.

Prerequisites: Basic knowledge of UNIX or Windows NT system administration.

Audience: Technical individuals and technical management.

Overview: The fundamental roles, responsibilities and tools required to install, configure and manage Internet and Intranet server systems. These include web servers, DNS servers and FTP servers.

H06 2:15 PM - 4:45 PM

Internet Security and Firewall Systems

Basic security definitions and requirements used to configure rules for a firewall implementation.

Audience: Executives and technical management.

Overview: This workshop will emphasize the importance of security in general and a customized security policy that each business or organization needs to develop and manage. The speaker will present implementation procedures to make the computing environment more secure. An emphasis on security basics and security threats that hosts may experience on TCP/IP networks; step by step procedures on how to secure an operating system-including securing critical files, directories, daemons, access control mechanisms, auditing and logging and third party products and technologies.

Thursday, December 11

H07 10:00 AM - 12:30 PM

H08 2:15 PM - 4:45 PM (repeat session)

Java Primer

Java fundamentals and how to add Java applets to your home page.

Prerequisites: Basic programming experience and understanding of the Web.

Audience: Technical professionals, especially developers and administrators.

Overview: By using Java, your Web pages can be spiced up with animation, graphics, real-time (video) games, multimedia presentations, multi-user network games. This workshop will introduce you to what Java is, teach you how to develop simple Java applets and how to add them to a home page.

H08 is a repeat of H07.

Friday, December 12

H09 10:00 AM - 12:30 PM

Web Scripting

How to integrate the back-end databases with front-end web application.

Prerequisites: Basic understanding of the Web and HTML.

Audience: Technical professionals and technical management.

Overview: The Common Gateway Interface (CGI) is a way to enhance an HTML document and provide a way to allow web sites to generate documents "on the fly." Perl, an interpreted language, is well suited to system level programming often needed by CGI. Learn about these and other scripting tools and how to integrate databases with these emerging technologies.

H010 1:30 PM - 4:00 PM

Java vs. ActiveX

Compare and understand how Java and ActiveX may be used to develop web applications.

Prerequisites: Basic understanding of the Web.

Audience: Executives and technical management.

Overview: The integration of Java and ActiveX makes for a win-win combination for both designers and developers alike. This workshop presents comparisons of both of these languages and some key benefits and applications which focus on both ActiveX and Java.

Register for the conference by fax at 203-226-6976

Monday, December 8

10:00 AM - 12:30 PM; 1:30 PM - 5:00 PM

TCP/IP Infrastructure: Foundation for Enterprise Networks

Prerequisites: Basic understanding of networks.

Audience: Technical professionals, especially network and system administrators, and technical management.

Overview: Learn about all layers in TCP/IP network architecture and examine key protocols that operate at each layer. Understand how to subnet a TCP/IP corporate network and the role of broadcast and loopback addresses. Examine key protocols defined in the TCP/IP architecture. Analyze the relationship between the TCP/IP architecture and actual packets on the corporate network.

Uday O. Pabrai, CEO, NetGuru Technologies, Inc.

Tuesday, December 9

9:30 AM - 12:00 PM; 1:00 PM - 4:30 PM

UNIX & Windows NT Internetworking

Prerequisites: Basic understanding with operating systems such as UNIX or Windows NT.

Audience: Technical professionals, especially network and system administrators, and technical management.

Overview: Examine how to deploy UNIX and Windows NT systems on a TCP/IP network. Learn about TCP/IP administration on UNIX and NT by working with commands, processes and files. Step through key TCP/IP administration files such as HOSTS, SERVICES and INETD.CONF. Understand how to troubleshoot problems on TCP/IP networks using ICMP and commands such as IPCONFIG, ARP, ROUTE, PING and others. Examine the role of application protocols such as the Domain Name System (DNS) and the Network File System (NFS) on TCP/IP networks.

Uday O. Pabrai, CEO, NetGuru Technologies, Inc.

Wednesday, December 10

10:00 AM - 12:30 PM; 2:15 PM - 5:30 PM

Internet Security: Firewalls to Filters

Audience: Executives and technical professionals especially those that will be addressing corporate Internet security issues.

Overview: Examine the threats that today's computing environments face and learn how to secure all your corporate assets. Understand the types of attacks that are common such as masquerading, denial of service, trapdoors, and Trojan horses. Analyze weaknesses in operating systems such as UNIX and Windows NT that make the corporate infrastructure vulnerable. Learn to develop a customized Internet and intranet security policy that meets business requirements. Understand the relationship between firewall systems and rules and filters defined in firewalls and how that ties in to your corporate security policy.

Uday O. Pabrai, CEO, NetGuru Technologies, Inc.

Thursday, December 11

10:00 AM - 12:30 PM

Managing Networks and Systems Using SNMP

Prerequisites: TCP/IP Infrastructure tutorial or equivalent background on TCP/IP networks.

Audience: Technical professionals, especially network and system administrators, and technical management.

Overview: Learn how SNMP works and the relationship between SNMP, Management Information Base (MIBs), network management stations and management systems. Centralize and automate the management of all key systems such as web servers on your corporate network.

Web Infrastructure: TCP/IP Technology Workshops

Sponsored by:



The latest in SNMP standards and ASN.1 MIB definition language and Remote Monitoring (RMON) MIB information for managing remote LANs from a central location. Learn about dominant vendors and products for managing web sites.

Jeff Erwin, President/CEO, Kaspia Systems, Inc.

2:15 PM - 4:45 PM

Web Server Performance Analysis & Tuning

Prerequisites: TCP/IP Infrastructure and UNIX & Windows Internetworking tutorials or equivalent background on TCP/IP and system administration.

Audience: Technical professionals, especially network and system administrators, and technical management.

Overview: Web server and network performance analysis. Examine factors such as CPU, memory, frequency of transactions, size of transactions, and many others that impact the performance of web server systems.

Speaker to be announced.

Friday, December 12

10:00 AM - 12:30 PM

Routing in Enterprise Networks

Prerequisites: TCP/IP Infrastructure tutorial or equivalent background in TCP/IP networks.

Audience: Technical professionals, especially network and system administrators, and technical management.

Overview: Examine the role of communication devices such as routers, switches and hubs on the design of the corporate network infrastructure. Learn the basics of routing protocols such as RIP, OSPF and BGP. Analyze how routers and routing protocols can significantly impact the performance of networks and applications.

Keith Levkoff, Senior Product Analyst, Progressive Strategies, Inc.

1:30 PM - 4:00 PM

Migrating to IPv6

Prerequisites: TCP/IP Infrastructure tutorial or equivalent background in TCP/IP networks.

Audience: Executives and technical professionals.

Overview: Learn about new features introduced with the new standard for TCP/IP networks, IPv6. Issues related to addressing, security, reliability and multicasting with IPv6, how to introduce IPv6 in your environment and address the management of IPv4 and IPv6 networks. Compatibility issues between IPv6 and IPv4; plan to support IPv6 in your TCP/IP corporate infrastructure.

Henry Yang, Technical Director/Senior Consulting Engineer, Network Products, Digital Equipment Corp.

Register on the Web at www.internet.com

Adweek Forum

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The Winding Road to the Magical \$1 Billion Billings Mark

A Two-Day Seminar About Marketers Who Have Been Successful In Building Brands and Making New Links to Consumers on the Web

The Pressure's On to Come Up with a New Economic Model

Publishers and broadcasters are under pressure like never before. Banks, investors and senior management are screaming for black ink. Advertising has been growing at a fairly brisk pace — but so have expenses. There's almost no site that can claim to be making a profit. But maybe we're all misreading the tea leaves.

Somewhere there's content that subscribers will pay for. Similarly, somewhere there's enough advertising revenue to carry some more of the weight. The trick may be in coming up with a more realistic business model that properly values the Web's more intimate connection with readers and viewers. But it may also be time for Web site managers to look at some new revenue models.

This forum will focus on many of these issues. It is designed specifically for everyone searching for the answers on the real potential for the Web. If the audience is there, why aren't the dollars rolling in? What can you learn from new applications? What do web aggregators have to say about increasing efficiencies for advertisers, and with that, cost per thousand (CPM) calculations — or even better, cost per contact (CPC).

Monday, December 8

10:00 AM - 11:00 AM

Opening Address: Making a Stronger Value Argument — What We're Selling and What's Holding Us Back

Rich LeFurgy wears two hats: Besides leading the charge for Starwave's impressive web offerings — Mr. Showbiz, ESPN Sportszone, NBA.com and NFL.com, Rich is also chairman of the Interactive Advertising Bureau. As such he has a deep

understanding of the frustrations of both buyers and sellers of advertising on the Web. Somewhere there's got to be a breakthrough strategy that will take the Web to the next level. Are we all too impatient? Rich will help set your agenda.

Rich LeFurgy, Senior Vice President, Advertising/Marketing, Starwave

11:00 AM - 12:30 PM

Publishers' Lament:

The Quest for a Realistic Business Model

A good crosssection of content providers bring you up to date on their attempts to gather a big enough audience to impress advertisers. What are they doing to improve content? How are they selling their sites? Are there new ways to value sites so that the "added-value" of this medium to what these companies are doing in so-called "real media" is considered?

Moderator: Andrew Jaffe, Executive Editor, Adweek Magazines.

Panelists: Kathryn Creech, General Manager, HomeArts, Hearst New Media & Technology; Sarah Chubb Sauvayre, Director, CondeNet; Dan Orum, President, Thrive; Kris Hagerman, President/Chief Executive Officer, Big Book; Ramona Ambrozic, Vice President/Marketing, Wire Networks, Inc.

1:30 PM - 2:30 PM

Reality Check: Where Is Adspend Today — And What are the Barriers to Reaching the Magic \$1 Billion?

Forrester continues to keep close tabs on what advertisers are saying about the Web. What are their frustrations with the numbers? Do they trust web site counts? What are they doing with all the detailed reports they are getting? Are they more interested in dealing with aggregators or with site sales managers? What will make this kind of medium much more valuable to them than traditional media? No one follows this research more closely than Mary Modahl, who's been leading the charge in this area for Forrester for several years now.

Mary Modahl, Group Director/New Media Research, Forrester Research, Inc.

2:30 PM – 4:00 PM

Information, News or Entertainment — Which Will Become the Dominant Content Model on the Web?

There still is a lively debate going on about the dominant content model for the Web. Billions of dollars are riding on the answer. We asked the architects of some of the Web's most admired sites to talk about the issue and outline the potential of the three main content groups: information, news and entertainment.

Moderator: Andrew Jaffe, Executive Editor, *Adweek Magazines*

Panelists: Terry McDonnell, Editor, *Men's Journal*; Dan Okrent, Editor of New Media, Pathfinder; Edmond Sanctis, Senior Vice President/General Manager, NBC Digital Productions; Jim Moloshok, Senior Vice President, Marketing, Warner Bros. Online

Tuesday, December 9

9:30 AM – 10:30 AM

Selling Local: The Web Starts to Help You Order Pizza

There seems to be tremendous interest in the local market. Newspapers and TV stations own this market in the "real" world and now a number of more targeted services have appeared to challenge their franchise in the "virtual" world. What is the potential for providing news and information for neighborhoods? How hard is it to draw advertisers into this medium? What are the economics of the medium that eventually will determine the winners and losers?

Moderator: Terry Myerson, President, Intersé

Panelists: Paul DeBenedictis, President/Chief Executive Officer, Digital City Inc.; Ellen Siminoff, Director, Yahoo! Communities; Mary Lynn McGrath, Director of Business Development, Sidewalk, Microsoft Corporation

10:30 AM – 12:00 PM

Selling on the Web — Some Brilliant Case Histories

Selling directly to customers seems the best way to drive revenue. The Web offers one-to-one interactivity in a way that print and TV cannot. But there are downsides to going this route — particularly if it upsets your well-established retail channels. We asked some of the pioneers in the more robust areas of consumer commerce to talk about the reasons for their early success and their secrets to growing this channel.

Panelists: Terrell Jones, Chief Information Officer, SABRE Group and President, SABRE Interactive (responsible for the Travelocity site); Richard Barton, Business Unit Manager, Expedia, Microsoft Corporation

1:00 PM – 2:00 PM

Repping Sites — What Kind of Arguments Work with Advertisers? Is This the Same as Selling Print or Broadcast or What?

Aggregators are already providing advertisers with opportunities to reach high-value demographic and psychographic niches never before offered in so-called "real media." They can put your banner before an 18-year-old college kid at just about the time he's ready to order out and they know whether a potential car buyer has seen your banner before and whether

they're ready to buy a car this month. Now we've asked them to draw on their knowledge of traditional media and tell you what new skills are required for success in web selling.

Moderator: Simon Roy, President/Chief Executive Officer, Accrue Software Inc.

Panelists: Wenda Harris Millard, Executive Vice President, Marketing/Programming, DoubleClick, Inc.; David Carlick, President, Media Services, PowerAgent; Dave Zinman, Co-founder, Director of Business Development, Focalink Communications, Inc.

2:00 PM – 3:00 PM

When Push Marries Shove: The Problems of Joining Lightning Fast Web Developers with Ad Agency Brand Stewards

Advertisers are turning, in ever increasing numbers, to small specialty shops to manage their web sites and build their brands in cyberspace. But agencies are still being asked to shoulder responsibility for managing the brand through all media. So the difficulty of marrying the two cultures — hot new web site marketing unit with established advertising agency account service — is a critical problem for marketers. What are the barriers to understanding? What more can be done to assure a solid, coordinated effort?

Moderators: Andrew Jaffe, Executive Editor, *Adweek Magazines*; Norman Lehoullier, Managing Director, Grey Interactive

Panelists: Shawn Gold, VP/Director of Programming Strategies, Rare Medium; Michael Golden, Vice President, Organic Online; Ron Bloom, President/CEO, THINK new ideas, Inc.

3:00 PM – 4:00 PM

And the Future is...a Television (Push) Metaphor

The seminar closes with a look into the near future. Several new technologies are turning the TV into a computer and enabling people at home and at work to move quickly onto the Web. Meanwhile push technology enables sites and services to push advertising at the user the way advertising now is broadcast on TV. These two developments appear to offer great promise. If the Web can come into the home and office through cable wires, it should have enough bandwidth to provide real-time video with virtually no download delay. This means that the Web, for the first time, will be able to compete with print and TV as a branding medium. This new technology is examined by a panel of experts to talk about how soon this brave new world of branding will actually reach enough users to achieve critical mass.

Geoff Katz, Senior Producer, Navio Communications; Scott Moore, Business Affairs Director, MSNBC; Anna Zornosa, Senior Vice President, Advertising Sales/Affiliate Development, PointCast

2-Day Workshop

Developer Day

Sponsored by:



Get the latest on developing, deploying, and managing next-generation Internet sites and intranet applications as Sun and its partners provide comprehensive training and updates in the areas described.

Monday, December 8

10:00 AM - 11:00 AM

Java Development for the Networked Age

Static document and content-centric web sites are dead. Today's Web demands dynamically created and on-the-fly personalization. And, as corporate computing shifts to the open platform of the Web, traditional developers are looking for tools and methods for building true client/server style applications on the Web. This session will highlight new Java™ tools such as Java™ Studio™ authoring environment using JavaBeans components for content developers and Java™ WorkShop™ development environment for Java developers; as well as robust traditional tools such as Sun Visual Workshop™ C++ for server applications developers.

11:00 AM - 12:30 PM

Building Distributed Applications With Java

This session will include "what is RMI?" and how to design client/server and peer-based applications using Java. Included is how agents can significantly assist in building asynchronous computing models in the face of synchronous distributed computing mechanisms.

1:30 PM - 4:00 PM

Track 1: Java Development

For developers, this track focuses on how Java technology can enhance Internet and intranet solutions. Topics include:

- Java Certification
- Java Application Development Strategies
- The Java Security Model

1:30 PM - 2:45 PM

Track 2: Deployment in the Enterprise

For MIS managers, this track will provide tips on building a corporate intranet or an Internet site. Topics include:

- Business Challenges in Deploying Commercial Internet Sites
- Netra Server Solutions

2:45 PM - 4:00 PM

Track 3: Enterprise Management

For IT executives, this track provides an overview of the issues involved in running your intranet or Internet services. Topics include:

- Building Secure Internets/intranets
- Enterprise Network Security



Register for the conference by fax at 203-226-6976

Monday, December 8

The Internet is evolving beyond the desktop to become the world's digital communications infrastructure, expanding into the office and the home of the future through the cell phone, the pager, the television set and CD-ROM. While conventional PC-based browsers get fatter and more feature-laden, a new generation of adaptable thin clients is embedding Internet functionality throughout the electronic environment.

10:00 AM - 11:15 AM

Bringing the Web to the World:

Adding Web Functionality to Almost Anything

Consumer electronics manufacturers are ramping up to embed web accessibility into their devices to bring the Web to the masses. But simple connectivity is not enough. While televisions, games consoles, and network computers are capable of running thin browsers that function much like their larger PC-based forerunners, solutions must also be in place for devices with limited memory and storage such as pagers, phones, and some PDAs to fully leverage the vast array of web-based information and service.

11:15 AM - 12:30 PM

The Killer Appliance App: A Developer Panel

A panel of Internet appliance developers describes the challenges of embedding the Internet into business and consumer products and debates the most promising applications in both the short and long term.

Moderator: Philip Monego, Sr., CEO, NetChannel.

Internationally recognized as an interactive online services and multimedia systems pioneer, Philip Monego has been at the cutting edge of three significant technology waves over the past 30 years.

Panelists: Farid Dibachi, Chairman/Executive Vice President of Development, Diba Inc.; Ken Soohoo, President, PlanetWeb; Ben Linder, Vice President, Marketing, Unwired Planet

1:30 PM - 3:00 PM

Delivering Web Content Successfully on Non-PC Devices

Devices like set-top boxes, televisions, cell phones and PDAs offer great opportunities for delivering interactive content. This session will focus on critical issues such as Internet-enabling a device, content conversion, and handling memory limitations for different media types.

Michael Sikillian, Product Manager, Spyglass, Inc.

Michael Sikillian is responsible for driving product definition, design and implementation for Spyglass web client technology, principally Device Mosaic, a lightweight web browser optimized for non-PC devices.

Appliances, Thin Clients and Hybrids Day

3:00 PM - 5:00 PM

NEW TECHNOLOGIES PANEL

Windows CE and the Pocket Internet Explorer

Windows CE and an appliance version of Internet Explorer bring mobile internet browsing and mobile Internet-based solutions across a range of handheld business and consumer products.

Jim Floyd, Microsoft Corp.

Java and the Thin Client

Thin clients don't have the room for megabytes of standing code. With Java applets, appliance developers can download functionality when it is needed.

Curtis Sasaki, Product Line Manager, JavaSoft. *Curtis Sasaki oversees product marketing for the Java Platform group, including Java Application Environments, Personal and Embedded Java, JavaOS and JavaPC.*

Smart Cards

Smart cards are becoming important components for security, electronic commerce and universal access to the Net.

Michael L. Schneider, President, Integrated Business Information Systems Ltd. *Michael Schneider has been described as a pragmatic futurist. His expertise includes the management of technology, the impact of technology on business, future workflow systems, smart cards, future home computing environments and artificial intelligence.*

Browsing on the Phone:

Handheld Device Markup Language (HDML)

The Internet and corporate intranets have now become repositories for mission-critical information. Unwired Planet's HDML platform uses a new language — Hand Held Devices Markup Language — to transfer data from the Net to familiar handheld wireless products like cell phones and two-way pagers.

Ben Linder, Vice President, Marketing, Unwired Planet. *Ben Linder is responsible for Unwired Planet's strategic marketing, marketing communications, and developer marketing activities.*

Register on the Web at www.internet.com

Internet Security Day

Sponsored by:



As the Internet evolves into a mission-critical infrastructure for global business, the security of information, applications and transactions on the Web becomes vitally important. The National Computer Security Association sponsors this broad survey of important security technologies and trends to focus corporate information managers, IT professionals and Internet implementers on the best practices for safe business use of the Internet.

Monday, December 8

10:00 AM - 11:00 AM

Web Site Security Overview

Most internal and external web sites have security tools and measures in place, yet many sites are still exposed to significant inadvertent and inherent web-related risks and liabilities such as negligence, internal and external attack, distribution of malicious code and denial of service. Whether browsing or managing Internet and intranet web sites, no minimal guarantee of availability, integrity, accountability or confidentiality exists. A top NCSA security expert discusses both the actual and perceived security risks of web sites to company and visitors, and offers the best practices to reduce liabilities.

Scott Gordon, Vice President of Business Development, NCSA. *With an extensive background in product line development, management and marketing with such companies as McAfee Associates, Cheyenne Software and Computer Associates, Scott Gordon has broad experience in computer viruses and the anti-virus industry as well as web site security issues and computer security marketing.*

11:00 AM - 12:30 PM

Killer Technology for Your "Killer Apps"

Security is fast becoming the new "killer application." If you don't have it, it could kill your business. The ability to conduct business electronically over the Internet in a secure manner depends on the use of mutually recognized standards. Interoperability between heterogeneous systems using different certificate authorities and cryptographic algorithms can only be achieved through the use of a common infrastructure of APIs and protocols. Effective security is an environment built on interoperable components, scalable to meet the dynamic needs of business in today's global environment.

Kathleen Kincaid, Director of IT Security Programs, IBM Corp. *Kathy Kincaid heads IBM's corporate-wide initiative to identify and deliver security solutions to customers and leads the firm's security related development efforts including the Cryptographic Competency Center.*

1:30 PM - 2:45 PM

Cryptography Panel

Public Key Cryptography:

Dr. Stephen N. Cohn, Vice President, Secure Systems, BBN Systems and Technologies

Cryptographic Accelerators:

Alex van Someren, President/CEO, nCipher Inc.

Cryptolope Secure Containers:

Jeffrey Kay, Cryptolope Architect, IBM Corp.

2:45 PM - 4:00 PM

Applications Panel

Java and ActiveX Security:

Roberto C. Medrano, President, Finjan, Inc.

Remote Access and Virtual Private Networks:

Gary E. Brooks, Director of Marketing, Digital Secured Networks Technology, Inc.

Secure Electronic Transactions Protocol (SET):

Larry Loeb, author, "Secure Electronic Transactions"

4:00 PM - 5:00 PM

Testing and Maintaining a Secure Web Site

Security is a journey, not a destination. Evidence has shown that even when employing firewalls, anti-virus and encryption solutions, an estimated 20% of companies still experience Internet-related security breaches. This informative session for webmasters and administrators covers a variety of physical, operational and logical security controls and describes the best practices for web site security.

- Surviving network-based attacks
- Safe URL and NIC referencing and log monitoring
- Appropriate encryption mechanisms
- Secure CGI scripts and client-executables

Jonathan McCown, Network Lab Manager, NCSA.

Jon McCown manages the NCSA Network Security Lab, the testing and certification facility associated with NCSA's Web Site Certification and Firewall Certification programs. His background includes over a decade of network-based system development and integration work in the government sector and in system engineering roles with Electronic Data Systems (EDS).

Register for the conference by fax at 203-226-6976

Internet Telephony: Voice on the Net™

Sponsored by:

pulver.com®

The expanding Internet infrastructure is becoming the communications backbone of the wired world, delivering voice, fax and messaging data across enterprise networks and the global telephone system. In this two-day intensive workshop, the telephony pioneers at pulver.com describe the state of technologies and markets and the evolution of unified messaging on the Internet.

Dates and Times:

Monday, December 8

10:00 AM - 12:30 PM & 1:30 PM - 4:00 PM

Tuesday, December 9

9:30 AM - 12:00 PM & 1:00 PM - 3:30 PM

Moderator: Jeff Pulver, President, pulver.com, is one of the world's leading authorities of Internet Telephony and related voice on the Net technologies.

Internet Telephony 101

Jeff Pulver will provide an overview regarding the history of Internet Telephony, where the industry has been and where it is headed.

Free World Dial-up II

Jeff Pulver will be presenting a field report regarding the progress of the Free World Dial-up Project.

Regulation of Internet Telephony

Review of the regulatory issues which have effected the Internet Telephony industry in 1997 and a review of issues which need to be addressed in 1998.

Issues Effecting the Internet Telephony Industry Today

An upfront look at the issues effecting Internet Telephony.

Enterprise Use of Internet Telephony Gateways

Lucent Technologies has developed an Internet Telephony Gateway which interconnects between the Public Switched Telephone Network (PSTN) and IP based networks. Learn how business customers can take advantage of Gateway technologies.

Enterprise Use of Fax over IP

Discover how corporations can take advantage of Fax over IP technologies.

Future Directions of Internet Telephony Gateways

During 1996, The Internet Telephony Gateway Industry was born. As this industry grows, issues related to interoperability, accounting and quality of service need to be addressed. Here's where you'll learn about the future directions of Internet Telephony Gateways.

Quality of Service of VON Technologies Delivered over the Net

One of the major obstacles affecting the large deployment of Internet Telephony within the business community is the quality of service associated with Internet Telephony.

Convergence of CTI and the Internet Telephony Industries

A look at distributed PBX's, Internet Voice Messaging and web-enabled Call Centers.



2-Day Workshop

Register on the Web at www.internet.com

Electronic Commerce Symposium

Sponsored by:

AMERICAN
EXPRESS

Moderator: Daniel Rosenbaum, Editor-in-Chief, 3 Ships Communications. *The founding editor-in-chief of Internet Shopper and the former editor of NetGuide, Rosenbaum has become a well-known commentator about technology. He appears weekly on the CNNfn network's "Biz Buzz" program, and has appeared on CNN and CNN International, "Good Morning America," CNBC, Fox Business News and the fx network's "Morning Show."*

Tuesday, December 9

9:30 AM - 10:00 AM

Opening Remarks

Allan Loren, CIO, American Express

10:00 AM - 10:30 AM

The Electronic Commerce Landscape

Recent developments that have enabled online buying and selling and the business revolution to come.

Shikhar Ghosh, Chairman, Open Market. *With Shikhar Ghosh at the helm, Open Market, Inc. is poised to redefine the electronic age by providing the first complete solution for conducting business on the Internet.*

10:30 AM - 11:30 AM

Online Commerce: Who Works the Magic?

We must never forget that online commerce is ultimately about someone buying and someone selling and someone paying. The magic of online commerce will be in how the physical activities of commerce get integrated with the virtual potential.

Rohan E. Champion, Vice President, Strategic Projects and Alliances, Federal Express. *Rohan E. Champion is responsible for developing the company's global electronic commerce strategy. Prior to joining Federal Express, he was President, Corporate Strategy, New Services for AT&T where he was responsible for electronic commerce, Internet, online strategy, competitive intelligence, analysis and pricing.*

11:30 AM - 12:30 PM

Online Shopping Technologies

Retail marketing is a science that has evolved over decades. Online shopping is currently in its infancy, but what can you take from the traditional retail model today and apply to the online model — and what do you need to leave behind? Learn how to use today's online catalog technology to surpass the print catalog experience. Explore simple, smart templates that will attract the eyeballs and open wallets. Discover what's selling on the Internet and why. Examine how technologies such as profiling and push will make customers return again and again.

Craig Danuloff, President/CEO, iCat Corporation. *Craig Danuloff, who founded iCat Corporation in 1993, is actively involved in defining the role of interactive marketing in business and the role of electronic commerce in consumer marketing.*

1:30 PM - 2:30 PM

Payment Services for Web-Based Electronic Commerce

Analysts forecast that \$134 billion in business-to-business sales will be conducted via the Internet by 2000. It is up to forward-thinking banks to provide the secure payment services to support this commerce. The presenter provides a business person's view of the components of security including a description of encryption, digital certificates and the Secure Electronic Transaction (SET) standard, and will discuss payment types now available and those under development for release during the next 18 months.

Sanford Brumley, Electronic Commerce Team, Chase. *Over the past 15 years, Sanford Brumley has led the development of a number of interactive banking services. For Global Payments and Treasury Services at Chase, he is responsible for the development of payment services for merchants who wish to sell goods and services via the Internet.*

2:30 PM - 3:30 PM

Financial Alternatives

In a few short years, the Web has spawned a variety of alternative commerce scenarios that include credit card aggregators, smart card links and electronic wallets with electronic cash and micropayments. A panel of developers describes the different approaches to getting money from the Internet.

Moderator: Larry Loeb, Contributor, Internet World. *Formerly a consulting editor for BYTE and senior editor for WebWeek, Larry Loeb is currently a contributor to Internet World. Loeb's latest book, "Secure Electronic Transactions," is published by International Thomson Computer Press.*

Panelists: Lee Stein, President/CEO, First Virtual Holdings; Jeff Irby, Vice President, Sales/Marketing, CyberCash; Andrew Bartels, Vice President, Encrypted Payments, American Express; Tom Carty, Vice President, GTE Cybertrust

Register for the conference by fax at 203-226-6976

3:30 PM – 5:00 PM

The Future of Information Commerce

Publishers sell on the Internet, but they also deliver their products digitally. In this session on information commerce, expert panelists discuss how content is found, filtered, distributed, delivered, retrieved, protected and — most critically, paid for on the Internet using an innovative IBM system.

Moderator: Jeffrey Charles Crigler, Vice President, infoMarket, IBM's Networked Application Services Division. *Jeffrey Crigler created infoMarket to provide customers with a powerful and flexible solution to their content search and retrieval requirements.*

Panelists: Barbara S. McCoy, Assistant Vice President, Internet Applications & Alliances; David Cope, Vice President of Marketing, Marimba; Keith McCall, Director, Internet Applications, Lotus Development Corp.; David Baird, Executive Director, Convenience Channel Programming, America Online, Inc.

Wednesday, December 10

10:00 AM – 11:15 AM

Customers.com: Making It Easy for the Customer to Do Business With You...

Successful electronic commerce players focus on streamlining the customer's entire experience: from researching options and customization to ordering, from checking order status to order fulfillment and delivery, through to payment, billing, and after sale customer service, as well as input into new product development. In this session you'll hear case studies of both business-to-business and business-to-consumer electronic commerce initiatives from a variety of industries. And you'll learn the seven critical success factors that these pioneering companies have employed.

Patricia Seybold, President, Patricia Seybold Group. *Patricia Seybold's consulting practice specializes in helping companies use technology to build better relationships with their customers and to streamline the information and business processes that affect their customer and their value chain partners.*

11:15 AM – 12:30 PM

Customers.com: Best Practices Panel

The Internet and the Web now offer truly cost-effective ways for companies to serve their customers better and to cement customer loyalty. In this session, you'll hear the best practices from the people and companies who have led the way in using the Internet to target key customer segments, serve customers better, help customers help themselves, personalize their service, and customize their offerings.

Panelists: John Samuel, Director of Distribution, Planning, American Airlines; Phil Gibson, Director, Interactive Marketing, National Semiconductor; Dudley Niggs, Vice President, Electronic Distribution, Wells Fargo; Mike Mulligan, Senior Vice President, Interactive Travel Group, American Express

2:15 PM – 3:15 PM

Internet Taxation, Regulation and Politics

Any goods or services that can be bought or sold or transferred through electronic commerce can be distributed quickly and inexpensively to consumers worldwide. Substantial questions remain about how electronic commerce will be treated by the various laws of taxation on the state, federal and international levels. One thing is certain: Taxation of Internet commerce potentially affects service providers, vendors and users alike, with each group having its own concerns about how its electronic commerce-related activities will be taxed.

Jeffrey D. Neuburger, Partner, Brown Raysman Millstein Felder & Steiner LLP. *Jeffrey Neuburger specializes in the counseling, litigation and negotiation of new media, interactive technology and intellectual property issues.*
Gerard R. Boyce, Partner, Brown Raysman Millstein Felder & Steiner LLP. *Gerard Boyce's diverse tax practice includes partnership taxation, corporate reorganizations, leasing, tax controversy, estate planning, and international taxation.*

3:15 PM – 4:15 PM

Distribution: Worldwide Delivery

After a product is sold online, it has to be delivered. Vendors of digital products are lucky; they can distribute over the Net. Most vendors though, have to deliver real packages around the world.

Bill Headapohl, Executive Vice President Electronic Commerce, CNET: The Computer Network; Alan Boehme, Director of Strategic Planning, DHL Worldwide Express

4:15 PM – 5:15 PM

Re-inventing Commerce

In a round-up to the symposium, a panel of successful electronic commerce pioneers describe their experiences, discuss what they've learned and join the audience in an open forum on the strategic implications of buying and selling on the Internet.

Moderator: Thayer Stewart, Vice President, Marketing, American Express Corporate Services
Panelists: Jaime Flores, Software Manager, Volkswagen Geda N.A.; Robert O'Malley, President, MicroAge, Inc.; Scott Eckert, Director, Dell Online Services, Dell Computer; Chris Sinton, Director, Cisco Connection, Cisco Systems

5:15 PM – 5:30 PM

Closing Remarks

2-Day Workshop

Intranet Forum

Sponsored by:



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<http://www.intraactive.com>



Moderator: David Garrett,
Vice President of Technology,
IntraACTIVE, Inc. and lead
author, "Intranets Unleashed"

Tuesday, December 9

9:30 AM - 10:45 AM

Building Private Webs for Corporate Constituents

A top Internet World speaker and intranet developer presents an up-to-date overview of Internet and intranet architecture, protocols and infrastructures and describes the developing state of enterprise computing in the age of the Internet.

- Best practices in intranet development
- Dominant vendors and emerging players
- Components of successful implementations

Mitra Miller, Manager/System Strategist, I-Net and New Media Services, BSG Group. *Mitra Miller has hands-on experience planning, building and supporting client/server and net-based systems and is co-author of BSG's "Building the Corporate Intranet," the definitive book on intranet strategy, implementation and management. She is currently at work on a sequel, BSG's "Managing the Corporate Intranet."*

10:45 AM - 12:00 PM

Developing Effective Intranets

A truly effective intranet connects people, not machines. Make sure yours is effective and becomes an integral part of your users' working day. Learn how to design an intranet based on what you and your users need to accomplish and how to sell this concept to all levels of users.

Christine Comaford, President, PlanetU, Inc. *Christine Comaford has been a consultant to the industry's foremost software companies and corporate developers since 1988. She has worked as a programmer on the development teams of Microsoft, Lotus, and several other vendors.*

1:00 PM - 2:00 PM

Acceptable Use: Internet and the Workplace

Basic equipment for the average professional employee is now a phone, a computer and an IP address. Widespread Internet access for employees brings new challenges to management. Crucial to the management task is the

development of an Acceptable Use Policy that stipulates the rights of the company and the employee regarding electronic communications and transactions carried out on the firm's computers. Equally as important is the deployment of software tools that can help the company manage its employees' Internet access.

- Guidelines for the development of acceptable use policies
- An overview of internet filtering software that can be used to manage Internet use according to the policy
- How you can use AUP and your chosen filtering software to successfully manage Internet use in your company

Susan Getgood, Director of Marketing, Microsystems Software. *Susan Getgood's expertise in computers and the Internet has been gained over more than a decade working in fast-growing, high-tech companies, usually based in her adopted home state of Massachusetts. In addition to her marketing responsibilities, Getgood offers seminars on online safety for schools, PTAs and other groups interested in protecting children in cyberspace.*

2:00 PM - 3:00 PM

Virtual Private Networks: The WAN Alternative

What are Virtual Private Networks (VPNs) and how can small- and medium-sized companies leverage them for electronic commerce? How can companies with multiple or international offices avoid the high costs associated with wide area networks (WANs) and the susceptibility to unsecured data transmission? Big companies have traditionally leased dedicated and costly telephone lines to connect their offices. Now with encrypted Internet VPNs, small- and medium-sized companies can have the same functionality at a fraction of the cost and complexity.

David Vereeke, CEO/Co-founder, i-Planet.

David Vereeke has worked in the computer industry for over 30 years. Prior to founding i-Planet, he spent eight years at Sun Microsystems as Director of Engineering where he was responsible for the development of Sun's network interface products and remote office product research.

3:00 PM - 4:00 PM

Using NCs on the Intranet

How suitable are Network Computers for mission critical applications within the intranet? Are they limited to Java-centric environments or do they have a broader appeal as the universal desktop? A panel of early adopters offers real world experience in using NCs for information browsing, desktop productivity and mission critical client/server applications, describing NC selection criteria, overall cost savings, implementation experiences and the NC's prospects vision for the future.

Doug Klein, CTO, Network Computing Devices. *Doug Klein was an original founder of Network Computing Devices in 1988. Prior to becoming president in November 1995, Klein held the positions of Vice President and General Manager of the X-terminal division and later, Vice President of technical services. In these roles, Klein has assisted in leading NCD's strategic initiatives in the enterprise computing market. Before founding NCD, he was manager of software support and third-party programs for Ridge Computers and had previous experience with Hewlett-Packard.*

Register for the conference by fax at 203-226-6976

Wednesday, December 10

10:00 AM - 11:15 AM

Web + IT = e-Business

Intranets bring benefits to both sides of the accounting ledger: New electronic commerce channels create new revenue streams while rapid internal communications improve cost savings and boost productivity. IBM's Gary Cohen reports on the results of international research on how real customers are progressing through phases of Internet adoption, leveraging existing investments, and integrating internal and external business processes to derive real business value in key business-to-business applications.

Gary A. Cohen, Vice President of Marketing, Internet Division, IBM Corp. *As the marketing VP for this new IBM division, Gary Cohen guides the transformation of IBM Internet technologies into useful solutions with broad market appeal. In addition to his current responsibilities, Cohen has recently been named to the Internet & Electronic Commerce Advisory Board.*

11:15 AM - 12:30 PM

Intranet Case Study: General Motors

General Motors, the world's largest corporation, and EDS recently teamed with Compaq, Lotus and Microsoft to implement one of the world's largest intranets. GM ACCESS, the network connecting GM corporate with 9200 dealerships, has paid off with faster product delivery, better customer service and reduced expenses for GM and its dealers. Executives from GM and EDS jointly present their objectives, strategies, deployment techniques, results of the project, and their recommendations for other organizations facing similar challenges. After describing the project, they join a panel of representatives from Compaq and Lotus to address questions from the audience about their work.

Marvin Kay, Manager of Dealer Information Systems, Vehicle Sales, Service and Marketing Division, General Motors

2:15 PM - 4:00 PM

Applications Roundtable

Users, vendors and visionaries discuss the most effective intranet applications.

Groupware: Ian Campbell, Director, Collaborative Computing, International Data Corp.

Sales Force Automation: Ken Bisconti, Senior Marketing Manager, Lotus Development Corp.

Customer Service: Sanford Cohen, President/CEO, Ergo-Tech, Inc.

Decision Support/Data Warehousing: Michael Gaiss, Vice President of Marketing, IQ Software Corp.

4:00 PM - 5:00 PM

ROI: Creating Executive Awareness of Net Benefits



Internet, intranet and extranet must all be part of the strategic planning process now underway by most executives in organizations of all sizes. In this practical session based on actual cases, Joel Maloff emphasizes the bottom-line business planning issues that concern most

managers: Cost reduction, enhanced sales, improved customer service, streamlined business operations and more.

- Senior executives impressions and misapprehensions of the Net
- Approaching senior managers for buy-ins
- Addressing concerns like security, the anarchy of the Internet and the desire to "wait until it's finished evolving"

Joel Maloff, President, the Maloff Company. *The author of "The Official Internet World net.profit" and many other books and articles, Joel Maloff consults with firms like the Discovery Channel, Nationwide Insurance, MetLife, The Toro Company, IBM, MCI, Sprint and UUNET, and is a frequent speaker at international Internet World events.*



Look for these icons throughout session descriptions:



- Indicates highest rated speaker according to previous conference attendees.

TOP 10

- Indicates session attracts the largest Internet World audiences.

Only the highest rated speakers and sessions were retained for this year's program. All other speakers and sessions listed are new for 1997.

Register on the Web at www.internet.com

2-Day Workshop

Webmasters Symposium

Sponsored by:



WEBMASTERS' GUILD



International
Society of
Internet
Professionals

Monday, December 8

4:30 PM - 5:30 PM

Opening Remarks

Tod Nielsen, General Manager, Platform Marketing, Microsoft Corporation; Chris Gulkar, Interactive Publishing Manager, Apple Computer Corp.

Tuesday, December 9

TRACK 1 - Technology Issues

9:30 AM - 10:30 AM

extensible Markup Language

Led by one of the editors of the WWW Consortium's XML specification, this panel of web document experts discusses the future of HTML and provides a tour of the developments in the works at Netscape, Microsoft, and the W3C to solve today's web architecture bottlenecks. The limitations of HTML; eXtensible Markup Language (XML) developments; Dynamic HTML's promise and problems; preparing for the next stage in web documents.

Moderator: Tim Bray, Consultant, Textuality/Co-Editor, W3C XML specifications. *Tim Bray led the design and implementation of the Open Text index. He is editor of The Gilbane Report, a Seybold Fellow and co-editor of the W3C XML specifications.*

Panelists: Lauren Wood, SoftQuad, Chair, W3C "Document Object Model" Activity; Jon Bosak, Sun Microsystems, Chair, W3C "XML" Activity; Scott Isaacs, Program Manager, Internet Explorer, Microsoft Corp.; Rick Gessner, Team Leader, Netscape Communications Corp.; Jared Sorensen, Manager, Corporate Publishing Services, Novell, Inc.

10:30 AM - 11:30 AM

Implementing Push Applications

The architect of PointCast's broadcast and server products describes the issues involved in creating Internet push solutions. Technical options and challenges; crafting "channels" of information; managing push resources.

Joseph Pistritto, Vice President, Systems Engineering, PointCast, Inc. *Joseph Pistritto architected PointCast's broadcast facilities and oversees development of PointCast's server and corporate products.*

11:30 AM - 12:30 PM

Scripting: A to Z

This session, for both programmers and web developers, describes how to use JavaScript, Perl, Tcl, Rexx, ScriptEase, and other script-

ing languages to glue components and applications together for faster and safer development and compares the popular script languages of today and tomorrow. Scripts vs. system tools vs. CORBA and DCOM; demos of innovative scripted solutions; simplicity, rapid development and safety.

Brent Noorda, President, Nombas, Inc. *Brent Noorda is responsible for establishing the technical direction of Nombas and leading the development of the company's products. Noorda is the creator of the ScriptEase language. He has more than 13 years of experience in the PC software industry as a professional C/C++ programmer.*

1:30 PM - 2:30 PM

Distributed Objects and Components

This session examines how organizations can leverage objects and components for their client/server and Internet applications and reviews the use of various object and component strategies including C/C++, ActiveX, COM/DCOM, Java, JavaBeans and CORBA. Linking component development with application/transaction servers; new web management technologies.

Jeff Simmon, Director, Internet Products, Sybase, Inc. *Jeff Simmon is responsible for managing the technical aspects of advancing the Sybase Internet strategy in the field. He has technical expertise in relational database technology, Internet/data communications, and 4GL/client-server applications development.*

2:30 PM - 3:45 PM

Multimedia Formats: A to Z

It's critical for web content providers to keep current with the latest multimedia technology. Yet we need to balance using what's cool with an understanding of the needs and wants of the user base and the cost/benefit for both the designers and audiences. Overview of the multimedia landscape: from GIF and JPG to Shockwave and RealMedia to VDO and VRML; multimedia innovation and the installed base; what works and what doesn't.

Stephan Spencer, Founder/President, Internet Concepts LLC. *Spencer's company applies data warehousing and search engine experience to create innovative sites with real-time response, web access to corporate knowledge bases, and one-to-one marketing.*
Jonathan Neese, Creative Director, Internet Concepts LLC

3:45 PM - 5:15 PM

Webcasting and IP Multicasting

Multicast networking is a key technology that enables a server to deliver a stream of packets simultaneously to an unlimited number of receivers by having the network replicate the packet stream to each end point. Multicasting technology, applications, and benefits; the impact on infrastructure, bandwidth and servers; market and technology outlook.

Stephen A. Collins, Vice President, Marketing/Business Development, StarBurst Communications. *Stephen Collins has over 15 years of engineering, product management, and marketing experience in the communications industry.*

TRACK 2 - Technology and Business

9:30 AM - 10:30 AM

Implementing Electronic Commerce

The technical obstacles to putting your business on the Net, creating shopping environments, executing transactions, and managing security are gone, and consumers are willing to use credit cards on the Net. The next step is to put it all together and start treating the Internet as a mainstream business channel.

Register for the conference by fax at 203-226-6976

David Toub, President, Internet Commerce Services Corporation (ICOMS). Prior to forming ICOMS, a provider of web order management and transaction processing services, David Toub held senior positions at BBN Planet and Digital Equipment Corporation, focusing on the use of information technology and networks to drive global sales, marketing, service and distribution activities.

10:30 AM – 11:30 AM

Testing and Maintaining a Secure Web Site

Evidence has shown that even when employing firewalls, anti-virus and encryption solutions, an estimated 20% of companies still experience Internet-related security breaches. This informative session for webmasters and administrators covers a variety of physical, operational and logical security controls and describes the best practices for web site security. Surviving network-based attacks; safe URL and NIC referencing and log monitoring; appropriate encryption mechanisms; secure CGI scripts and client-executable.

Jonathan McCown, Network Lab Manager, National Computer Security Association. Jon McCown studies security issues for NCSA, the leading organization devoted to computer security issues in corporations, associations and government agencies.

11:30 AM – 12:30 PM

Webmasters' Legal Primer

This session will provide a brief overview of legal questions and risks faced by every webmaster, including: Privacy and confidentiality; liability for user activity and the role of the subscriber; copyright and piracy; domain names and link liability; Internet outages and denial of service attacks.

Jonathan Ezor, Director of Legal Affairs, Poppe Tyson, Inc. Jonathan Ezor is the author of the *Attorney@Law* monthly column for the @NY electronic newsletter, and is co-author of "Producing Web Hits."

1:30 PM – 2:30 PM

What Every Webmaster Needs to Know About Virtual Communities

The developer of The Palace virtual community software discusses case studies from both large and small companies that have implemented virtual communities to boost repeat visits and develop profitable electronic commerce worlds. He describes how to craft content, promote special events and create more interactive experiences.

Jim Bumgardner, Co-Founder/Chief Technology Officer, The Palace. The creator of "The Palace" virtual community software now visited by more than one million users and 1,000 organizations worldwide, Jim Bumgardner pioneered virtual community development.

2:30 PM – 3:30 PM

Technology-based Solutions that Strengthen Your Internet Marketing Strategy

This session by leading web promotion practitioners provides a basic understanding of the latest technology-based marketing solutions being used successfully by corporate web sites. See real world examples of how webmasters and corporate marketers are working together to leverage the strengths of technology and marketing. Direct e-mail; online advertising options; database mining and web site analysis.

John Weiss, Marketing Director, WebPromote. John Weiss has helped develop the online marketing services offered by WebPromote, including direct e-mail, banner ad services and directory/search engine promotions

Harvey Morris, Business Development Manager, WebPromote. Harvey Morris has over a decade of experience in high-tech sales, marketing, and business development and worked for eight years at the technology learning products division of Gartner Group.

3:30 PM – 5:15 PM

Buying Web Development: What Do Clients Really Want?

A number of factors define a successful relationship between web developers and their clients — everything from writing winning business proposals and developing realistic project budgets, to efficient project management and timely project completion dates. A panel of clients and developers join in a candid discussion on the challenges in creating and maintaining profitable, long-term, mutually beneficial relationships.

Moderator: J.P. Frenza, Author, "Web & New Media Pricing Guide." In addition to authoring business books on the computer industry, J.P. Frenza is the director of the Earth Pledge Foundation's Division for Sustainable Media, a full-service Internet agency that produces World Wide Web (WWW) sites for non-profit organizations and socially responsible businesses.

Panelists: Richard Adams, Director of Business Development, EarthWeb; Carla Hendra, Senior Partner, Direct/Interactive Marketing, IBM at Ogilvy & Mather Direct; Dev Mukherjee, Director of Internet Marketing and Service, IBM Personal Systems Group; Alex Sherman, Director of Business Development, R/GA Interactive; Mark Wachen, Director, New Technologies and Business Development, Sony Music

Wednesday, December 10

10:00 AM – 11:15 AM

New Technology Showcase

Panelists: Include representatives from Apple Computer, and Microsoft Corporation

Topics will include: Apple's Rhapsody, Yellow Box, The Open Profiling Standard, Windows NT, and late-breaking news from the exposition.


11:15 AM – 12:30 PM

Webmasters Roundtable

Webmasters from companies large and small discuss their current projects, perspectives on technology and market trends and the development of webmaster profession at this popular wrap-up session.

Moderator: Matthew Cutler, Founder/Director of Business Development, net.Genesis Corporation. Cutler leads net.Genesis' strategic product planning and marketplace education efforts. He also serves as president of the Webmasters' Guild.

Register on the Web at www.internet.com

 **2-Day
Workshop**

Push Technology Summit

Sponsored by:



Wednesday, December 10

10:00 AM - 11:00 AM

Pushing into the 21st Century

A leading developer discusses the state of push technology and describes the growing list of push business solutions. He also looks ahead at new applications and at new content sources for Internet-delivered information.

- Current and future push applications
- Integrating push with existing technologies
- Push technology's killer apps

John Payne, President/Chief Operating Officer, AirMedia. *John Payne directs overall strategic business development and growth for AirMedia's wireless push technology as well as for the wireless messaging software developed and marketed by AirMedia's Notify! Group.*

11:00 AM - 12:30 PM

Technology Update

A panel of vendors and users describes the latest advances in standards, servers and applications that are finding growing audiences for pushed content on the Net.

CDF: Microsoft Corporation

Server Technologies: Netscape Communications Corp.

Software Push: Marimba

Smart Push: John Laing, CEO, Wayfarer Communications

2:15 PM - 4:00 PM

NEW MARKETS AND APPLICATIONS:

Corporate Push

Unlike a passive web site, a push server helps build continuing relationships with customers, employees and prospects. In this session, an early architect of the Internet explores the options available to enterprises to target and deliver business information directly to their communities of interest.

Dr. Richard Schwartz, Founder/Chairman/CTO, Diffusion, Inc. *One of the creators of Paradox and an early Arpanet visionary, Dr. Schwartz founded Diffusion to develop business-to-business push applications.*

Wireless Push: Reshaping the Balance of Power

With the push content market estimated to be worth \$5.7 billion by the year 2000, the immediacy, convenience and content customization offered by wireless push technology is transforming the Web into a broadcast medium.

Sandy Goldman, Vice President, Consumer Group, WavePhore, Inc. *The founder of Turner Broadcasting's Checkout Channel, Sandy Goldman is responsible for the launch of WavePhore's consumer direct service that transmits data to home PCs via the Vertical Blanking Interval (VBI) portion of television signals.*

Audio Push

New pager-sized playback devices are taking push technology on the road with timely, filtered audio-only content delivered via the Net. An audio appliance developer of one of the leading products describes audio push and the growth of designer Internet beyond the desktop.

Nathan Schulhof, Founder/President/CEO, Audio Highway. *Before starting Audio Highway to develop and market audio push, Schulhof was the founder of "Test Drive Corp.," the CD-ROM software catalog.*

Multicasting Push

A new wave of multicasting techniques lets application developers, ISPs and systems integrators push large amounts of data to millions of users instantaneously and efficiently. What is needed for true push technology is a common communications platform that enables any multicast application to move any type of data over any type of network instantaneously and reliably.

- The difference between "pull" and true "push" technology
- What the industry needs to do in order to make true push a reality
- How true push technology will change the way we communicate over public and private networks

Albert Chen, Vice President/Co-Founder, GlobalCast Communications Inc. *At GlobalCast, Albert Chen works to commercialize the research and development that formulated the IP multicasting protocols and communications software for private intranets, corporate extranets and the public Internet.*

4:00 PM - 5:00 PM

Intelligent Agents: Making Push Smarter

Emerging web-based intelligent agent systems offer an alternative to the desktop model of real-time, continuous information delivery streams, freeing up desktop processing power and tailoring content to users' interests to automatically deliver a broader variety of documents across the Internet. But are these two technologies mutually exclusive?

- The pros and cons of unintelligent push
- The future of intranet agents
- Personalization and community-building

Mike Kaul, CEO, WiseWire Corporation. *Previously with Oracle Corp., Kaul specialized in developing new markets, creating strategic accounts, and forming key partnerships for video-on-demand solutions, integrated document management, the ConText search engine, intranet/Internet systems and electronic commerce products.*

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Opening Keynote

9:00 AM – 9:45 AM

Stephen M. Case
Chairman/CEO
America Online, Inc.

10:00 AM – 11:00 AM

Session 111

Internet Personalization: Sending a Focused Message

TOP
10

Fine-tune your web pages with personalized content that matches the needs and interests of each reader. See how personalization is most effectively applied, how it builds value in the web experience, and why it may make sense for your site.

- Current technologies, architectures and costs
- The creation and scaling of a user database
- Incorporating data from usage patterns and user profiles

Chris VandenBerg, Lead Program Manager, Internet Services Business Unit, Microsoft Corporation. *A popular Internet World speaker, Chris VandenBerg has spent the last two years focused on the implementation of web technology in Internet and corporate customers and multinational service providers.*

10:00 AM – 11:00 AM

Session 112

Internet II – Implications for the Future

Internet II has become the most important new Net development since the creation of NSFnet and the World Wide Web. A small number of research institutions and premier universities are delivering on the Internet's original promise of global communications at superhigh speeds with true multimedia access for full motion graphics, cooperative computing and the propagation of new technologies.

- Internet II architects describe the technology
- Panelists discuss the effect on mainstream Internet users

Moderator: Mark Lonergan, Partner, Heidrick & Struggles. *Mark Lonergan is a Director at the international executive recruiting firm at Heidrick & Struggles. He is also the managing partner for his firm's internet practice, specializing in projects to recruit CEOs and general managers for companies in the Internet market.*

10:00 AM – 11:00 AM

Session 113

Online Gaming: Who's Got It Right?

A+

Join *Internet World's* "Your Own Time" columnist Eric Berlin and a panel of personalities from the online gaming industry in a lively discussion of the Internet gaming business. See 1998's newest online games in action, learn about recent trends, and decide which companies

and technologies will win out.

- Subscription vs. advertising revenue models
- Multi-user interface tools
- Developing online game communities

Eric Berlin, Contributing Editor, Internet World

Conference Sessions

Wednesday, December 10

Magazine. Andrew Kantor, Editor-in-Chief, Internet Shopper Magazine. *Andrew Kantor, former editor-in-chief of Mecklermedia's Internet.com web site, and former senior editor of Internet World magazine has also worked as staff editor at PC Magazine, where he covered networking and communications. Kantor has been interviewed on CBS's 60 Minutes, and has appeared on ABC, Fox, NBC, and HBO, as well as AP Radio, CBS News Radio, and National Public Radio's Science Friday.*

10:00 AM – 11:00 AM

Session 114

Public Relations on the Internet

Capitalize on the connectivity, timeliness and time shift features of the Internet to maximize your public relations effectiveness. See how online outreach to web publications, newsgroups and effective links to complementary sites can augment more traditional public relations programs.

- Practical tips to help you use the Internet to boost exposure
- The critical importance of newsgroups
- Leveraging existing PR materials online

Pat Meier, President, Pat Meier Associates Public Relations. *Pat Meier's 12 year-old technology public relations firm uses the global reach of the Internet for both traditional media programs and online campaigns.*

10:00 AM – 11:00 AM

Session 115

The Five C's of Web Marketing

TOP
10

Cool: Your site must be compelling to your specific audience. **Content** is king; but what is it; who's got it; when is it too much? **Context:** How to make your information findable, meaningful and useable.

Contact: Are you ready to communicate?

Control: What it means to manage a

customer as an asset.

- Balancing form and function in a marketing web site
- Proven navigational tricks and tips
- When it's too late to answer your e-mail
- Techniques for building customer loyalty and bonding

Jim Sterne, President, Target Marketing. *Jim is the author of "World Wide Web Marketing" and "Customer Service on the Internet." He zeroes in on the essential ingredients of successful commercial web site design strategy in this popular Internet World session.*

Register on the Web at www.internet.com

Conference Sessions

Wednesday, December 10

11:15 AM - 12:15 PM

Session 121

Browser Shootout



Internet Shopper's editor-in-chief Andrew Kantor and a panel of leading technologists compare the important features and functions of the latest versions of Microsoft Internet Explorer and Netscape Communicator.

- The latest HTML implementations
- Java and ActiveX performance
- New Webtop paradigms

Moderator: Andrew Kantor, Editor-in-Chief, *Internet Shopper Magazine*. See session 113 on page 27 for bio.

11:15 AM - 12:15 PM

Session 122

Disintermediation: Middlemen Beware

The Internet is substituting information networks for physical infrastructures. Increasingly, jobs, capital and partners will no longer be tied to geographic and physical limitations. What does this mean for you? Technology strategist Eric Greenberg articulates the issues facing the enterprise, highlights solutions that have worked, and challenges you to envision innovative solutions that address core business opportunities.

- Internet disintermediation defined
- Examples of the altered business relationships
- Capitalizing on the new opportunities
- The larger ramifications for business and society

Eric Greenberg, Founder/Chairman, Silicon Valley Internet Partners. Greenberg, who founded *Silicon Valley Internet Partners* in 1996, helps leading-edge clients implement fundamental business and technology changes that result in successful digital businesses.

11:15 AM - 12:15 PM

Session 123

eBoB: Judgement Day Is Near

Forget Webzines, chat lines, streaming video and push technology. The most exciting news about the Internet is the imminent business-to-business electronic commerce explosion that will transform hundreds of thousands of small- and medium-sized companies into global concerns one hot sales lead at a time. See how businesses of all sizes will profit from the emerging electronic commerce infrastructure.

- The decade of the customer
- Niche marketing strategies
- Marketing communications on the Web

Rick Segal, Managing Director, Hensley Segal Rentschler. A popular speaker on high-tech marketing, Rick Segal is co-founder of an award-winning business-to-business marketing communications firm recently named "Business Marketing Agency of the Year" by Advertising Age Magazine.

11:15 AM - 12:15 PM

Session 124

Deregulation, Decentralization, Development: The International Internet Market



Succeeding in the international Internet market takes an understanding of the global online services market and the changes affecting it. Explore the development of the Internet on an international level and its potential impact on telecommunications regula-

- tion, Internet telephony, unified voice/data network for interactive multimedia, global content and universal access to information.
- The benefits and threats of partnering with foreign operators
 - Content and culture: gaining acceptance away from home
 - Leveraging innovative technology to penetrate foreign markets
 - Where to access crucial information to develop a global strategy
 - Proven business models to minimize risk and increase opportunity

Daniel M. Winokur, President, eGlobe, Ltd., an Executive TeleCard Company. Daniel Winokur is responsible for all aspects of eGlobe's global Internet services platform which is being developed in conjunction with Executive TeleCard's PTT (Postal Telephone Telegraph) and other telco partners.

11:15 AM - 12:15 PM

Session 125

Eight Ways to Customer Service



Already using your web site for marketing? Good. Now what are you doing for the customers you already have? This session takes a practical look at how the Internet is letting us build relationships with individual customers, use computers to strengthen those bonds and keep the competition away.

- The least expensive/highest payback techniques
- The importance of web site "customerization"
- Electronic customer service as a competitive edge

Jim Sterne, President, Target Marketing. See session 115 on page 27 for bio.

Afternoon Keynote

1:15 PM - 2:00 PM

Lawrence J. Ellison
Chairman/CEO
Oracle Corporation

2:15 PM - 3:45 PM

Session 131

CGI vs. JavaScript

Many people see CGI and client-side JavaScript as competing technologies, and server-side JavaScript clouds the matter further. This session for web developers with HTML and basic

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programming experience will discuss the advantages, disadvantages and differences between CGI and client- and server-side JavaScript, with an emphasis on practical and useful examples of Dynamic Web applications.

- CGI and Perl usage and limitations
- Client- and server-side JavaScript
- Examples and side-to-side comparisons

Shishir Gundavaram, Chief Technical Architect, Newmarket Network. *Shishir Gundavaram is responsible for the management, integration and development of dynamic multimedia content for several highly acclaimed entertainment partners. In addition to his responsibilities at Newmarket, Gundavaram has authored many books on CGI programming.*

2:15 PM - 3:45 PM

Session 132

Rapid Application Development Tools

Complex, high-impact web sites incorporate dynamic pages that are customized on-the-fly from continuously updated databases. A new generation of authoring, markup and management tools is streamlining the creation and production of these kinds of sites in development environments that organize, track and secure dynamic web pages. Top developers describe their approaches and discuss the future of web site development tools.

- Data-driven web pages
- Database integration
- Prototyping and templating

Gary Steele, President/CEO, Netiva. *Gary Steele leads Netiva's distinguished management team toward penetrating the explosive web applications market.*

Jeremy Allaire, Principal/Director, Allaire Corp. *Jeremy Allaire helps provide vision on future Allaire products, and works closely with strategic partners in the Internet industry.*

Edwin R. Addison, President/CEO, KnowledgeLink

2:15 PM - 3:45 PM

Session 133

The Seven Keys to Effective Web Sites

Popular Internet World speakers Sachs and Stair provide insights into successful web development gleaned from reviewing hundreds of sites that attract us and lead us to purchase goods and services. This lively, interactive and online session focuses attention on the best practices in web creation.

- Visually appealing, useful and fun sites
- Timely, easy to find, easy to navigate and highly responsive sites
- The world's best examples of text, image, and multimedia integration

David Sachs, Assistant Dean, Pace University. *David Sachs has been actively involved in the development and implementation of computer science and telecommunications courses since 1984. He is co-author of "Hands-On Netscape," "A Tutorial and Video for Windows Users," "Instant Internet With Websurfer," and "Hands-On Internet, A Beginning Guide for PC Users."*

Henry "Pete" Stair, President, Mycroft Information, LLC. *Pete Stair has 40 years of professional engineering experience in Internet working architecture, design and business development. His firm services clients from the telecommunications, finance, education, banking, travel, non-profit, and insurance industries.*

2:15 PM - 3:45 PM

Session 134

Asia-Pacific Internet Markets

Half of the world's population lives in Asia where the number of Internet users is expected to triple to more than 28 million by 2001. A panel of four Asian experts examines the Internet markets in China, Hong Kong, Japan, Korea, Singapore and Taiwan. Learn about the similarities and differences within the region and how to do business with Asia online.

- Comparative analysis of the six countries
- The status of Internet infrastructure development
- The key players and trends

Moderator: Hyojong Kim, President, Domain Asia.

Ms. Kim has over 10 years of experience in information technology, telecommunications, and business management in the U.S., U.K., Europe and Asia encompassing client-server networks, data and voice communications networks, software development and the management of technology marketing and sales.

Panelists: Andrew P. Goldfarb, Managing Principal, JAFCO America Ventures Inc.; Hugo Shong, Editorial Director/President, International Data Group/Asia; Akio Zama, General Manager, Sales/Marketing, Asia Internet Holding Co., Ltd.; Maury Zeff, Senior Producer, Yahoo International; Scott Russell, Managing Director, Softbank Technology Ventures

2:15 PM - 3:45 PM

Session 135

1:1 Marketing Debate: How Much is Enough?

Customized, personalized one-to-one marketing is the conventional wisdom in Internet commerce, but how much personalization pays off? Does creating the "audience of one" mean higher sales or just higher sales costs? In the Web of the future, will every page be unique to every reader, with no two ad messages precisely the same? A leading interactive marketer and a top broadcasting executive square off on the advantages and pitfalls of the one-to-one future.

- Should all ads be personalized?
- Are custom sales pitches efficient?
- How you can build brand identity in a one-to-one world

Moderator: Jim Sterne, President, Target Marketing; Bruce Judson, Chief Marketing Officer/Executive Vice President, CellularVision USA. *In addition to his responsibilities with CellularVision USA, Bruce Judson is the author of a nation-wide best-seller, "NetMarketing: How Your Business Can Profit from the Online Revolution," and was formerly director of new media for Time.*

David Poltrack, Executive Vice President, Research, CBS Television Network. *David Poltrack oversees all research activities of CBS, encompassing audience measurement, market research, program testing and advertising research. He is responsible for the monitoring of the national and international video marketplace.*

Conference Sessions

Wednesday, December 10

4:00 PM – 5:30 PM

Session 141

Integrating Legacy Databases

The most valuable uses of the Web are based on improved access to databases, and the most valuable databases already exist as legacy systems. IT managers are under pressure to move quickly to the Internet in spite of their concerns, and they face a rapidly changing array of tools that promise to speed implementation. Internet pioneer Richard Mandelbaum discusses the key technologies, outlines what works and describes the risks and how they can be contained.


- Web database architectures
- Component-based development approaches
- ODBC-compliant SQL database issues
- Integrating IMS and IDMS and file systems like VSAM
- Java, CORBA, IIOP and other object and messaging technologies

Richard Mandelbaum, Ph.D., President/CEO, Applied Theory Communications, Inc. *Dr. Mandelbaum was a member of the original joint academic-industry advisory panels to the NSF which led to the establishment of NSFNet, the first core of the Internet. Applied Theory Communications, Inc. delivers web management services, intraneting, Internet and web applications training and access to the corporate world.*

4:00 PM – 5:30 PM

Session 142

Mapping Your Internet Business Strategy

 This strategic management-level session will teach you how to map out your Internet strategy for intranet applications, employee Internet access and use, and your web and Internet presence. You'll learn how to identify and match up your business goals with Internet services, and how to assess potential benefits. You'll also develop a personal Internet strategy and a resource "hot list" profile.

- Producing productive Internet users
- Avoiding "web addiction"
- Making the most of your web presence

Daniel Dern, President, Dern Associates. *Daniel Dern is the author of "The Internet Guide for New Users," and a popular Internet World presenter.*

4:00 PM – 5:30 PM

Session 143

Hidden Revenue Opportunities



Critics of the Web, looking for the big payoffs from the massive investments of the last few years ask, "Where's the money?" Often the answer is not easy to see. Explore the data about who's making money and how, and chart your own path to web profitability.

- Alliances, co-marketing and sponsorships
- Cost displacement and efficiency gains
- Integrating intranets with the Internet

Jill Ellsworth, Ph.D., Senior Partner, Oak Ridge Research. *Dr. Ellsworth is a consultant regarding business and marketing on the Internet for Fortune 500 companies. Ellsworth is the author of "The Internet Business Book," "Marketing on the Internet," "The Internet Business Kit," "The New Internet Business Book," "Education on the Internet," "The Internet Unleashed" and "The Web After Work for Dummies."*

4:00 PM – 5:30 PM

Session 144

Effectively Reaching the Women's Market Online

What do women want online? And how do you reach them?

- Building online community to increase brand loyalty and encourage transactions from female consumers
- Features that an effective web site can incorporate to provide interactivity, particularly for gathering marketing data, that compels women to participate
- Innovative cross-media promotions targeting women by experts who have successfully integrated the Web into their marketing strategies
- How other companies are measuring their return on investment for their women-specific online campaigns

Moderator: Aliza Sherman, President, Cybergrl Inc.

Panelists: Angela Kapp, Clinique; Helen Fogarty, THINK, New Ideas; Terry Spartaro, Stir; Kathryn Creech, General Manager, HomeArts Network, Hearst New Media & Technology

4:00 PM – 5:30 PM

Session 145

E-mail Debate: Is It Spam or UCE?

Unsolicited commercial e-mail (UCE) is the polite name for bulk electronic mail delivered to e-mail addresses "sniffed" without their owners' permission from newsgroups, chat lines and online directories. The volume of unsolicited e-mail is rising, causing server bottlenecks and depressing bandwidth for ISPs and enterprise networks alike. Should there be a law against junk e-mail? Is there a right of commercial free speech online? Is it an efficient marketing medium? The king of unsolicited commercial e-mail squares off with an anti-spam advocate in a debate on the right to send electronic sales pitches.

- Who pays — and who should pay — for UCE?
- Does the receiver have any rights?
- Can there be effective industry self-controls?

Moderator: Jack Powers, Vice President, Mecklermedia Corp.

Sanford Wallace, President, CyberPromotions, Inc. *Few Internet practitioners have caused more controversy than Sanford Wallace, whose unsolicited e-mail activities have landed him in court many times, generated megabytes of flame mail and sold thousands of products online.* **Jason Catlett, President/Founder, Junkbusters Corp.** *Jason Catlett's mission is to free people from junk communications. The company's web site, www.junkbusters.com, is a leading resource on stopping junk e-mail and unwanted junk mail and telemarketing calls. He has been active in Washington promoting solutions to the spam problem.*

Register for the conference by fax at 203-226-6976

News, Entertainment, and Shopping Online

In the Web's rapid growth as an important source of news, entertainment and shopping, smart entrepreneurs are crafting new interactive publications in exciting and unpredictable ways. In this overview of important new Internet publishing and marketing initiatives moderated by the editors of *Promo*, *Marketing Tools* and *Cowles/Simba Information*, you'll see how local news and information, entertainment and shopping sites compete with newspapers, television and direct mail for audience attention and dollars.

Thursday, December 11

10:00 AM – 11:15 AM

The Digital Estate: Publishing and the Net

Following the Fourth Estate, the Press, or more widely defined, the Media, The Digital Estate represents a move to the instant, individual access to information. This is 180 degrees from the traditional role of the publisher, who traditionally gathered, sorted and disseminated information. The Digital Estate "publisher" will be in a new position to add different value to the information, and add new services for revenue.

Moderator: Karen Burka, Editorial Director, New Media and Marketing Group, Cowles/Simba Information.

Panelist: Charles Martin, Jr., Vice President, Publishing/Advertising, IBM Global Telecommunications and Media Industries

11:15 AM – 12:30 PM

Local Internet Strategies for National Companies

The largest national companies have always been major players in local markets. NBC provides national programs to local affiliates, Times-Mirror syndicates national services to local newspapers, and Time Warner owns national cable networks like HBO along with local cable systems throughout the U.S. This same national/local model is beginning to play out on the Internet with some familiar faces and some brand new players. In this survey of the growing local content field, you'll learn about the products, processes and promises of this growing Internet segment.

- What consumers want from a local Internet sites
- The competitive landscape for local content
- New media advantages in local markets

Moderator: Tony Jaros, Managing Editor, New Media and Marketing Group, Cowles/Simba Information

Panelist: Rich Sutton, Director of Sales, Warner Bros. Online

Web Publishing & Marketing Day

Sponsored by:



2:15 PM – 3:30 PM

Entertainment on the Net

The much-heralded convergence of print and broadcast media is a lot more complex — and more important — than simply showing video clips on your PC. In this spirited discussion of how content, games and contests are handled online, a panel of interactive editors and developers describes the editorial and advertising opportunities for entertainment programming on the Web.

Moderator: Kerry J. Smith, Editor, *Promo Magazine*

Panelists: John Barnhill, President, Silicon Reef; John Lee, Corporate Evangelist, WebTV; Michael D. Carey, Senior Vice President, New Media, The Weather Channel; Melissa Sebok, Vice President, Magnet Interactive; Dean DeBiase, CEO, WorldPlay Entertainment; Christine Comaford, President, PlanetU; Charlie Fink, Senior Vice President/Chief Creative Officer, Greenhouse Networks

3:30 PM – 4:30 PM

Web Catalog Shopping

Internet electronic commerce technologies turn PC screens into shopping malls, closing the gap between awareness and sales. A panel of web pioneering catalog developers and technologists describes their online selling, marketing and merchandising successes and offer a glimpse of the future of direct marketing.

Moderator: Claudia Montague, Editor, *Marketing Tools*

Panelists: Sherif Danish, CEO, SAQQARA Systems; Deborah Kania, Vice President of Marketing/Sales, GuestTrack, Inc.; Matthew Cohn, President, Millstar Electronic Publishing Group

4:30 PM – 5:00 PM

Transforming Publishing and Marketing

The moderators summarize the news, entertainment and shopping experiences of the day's participants, identify the winning game plans and engage the audience in a discussion of business strategies for publishing and marketing success in a wired world.

Register on the Web at www.internet.com

ISP World

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WEBWEEK

Thursday, December 11

10:00 AM - 11:00 AM

The Future of the Internet

Increasingly a business' competitive advantage will come not just from technology, but more importantly from how technology is used to build stronger relationships with customers. As we continue to offer more choices, the ability to handle change and to embrace it will be a key component in the quest for excellence.

Paul Gudonis, President, BBN Corporation. *BBN provides Internet value-added services to more than 3,200 mid-to-large size businesses and organizations and network-centric R and D and technologies to commercial and government customers.*

11:00 AM - 12:30 PM

ISP 2000: Integrated Service Provider

This session will cover the emerging Internet Service Provider marketplace at the end of the 20th century and beyond. The different global access options currently available, from dedicated leased-line to dial-up; how the ISP of the future will evolve to meet all of the networking (Internet, intranet, extranet) and data needs of the most demanding multi-national customers; why the largest international interexchange carriers may not be the global providers of the future; examples of the providers offering next generation services today.

Moderator: Chris Moore, CEO, iPass Alliance, Inc., *the leading global Internet roaming service, providing local Internet access points to ISPs worldwide. A recent Network World article described the service as "a breakthrough...in pulling together Internet backbones."*

2:15 PM - 3:45 PM

New Technologies Panel: Cable, DSL, 56K Satellites

This session provides information on the basic technologies, status of their trials, and the potential impact these technologies may have on both your home and business users. The discussion focuses not only on technology issues, but social and support issues as well.

Laura Knapp, Networking Consultant, IBM Corporation. *Laura was influential in the rollout of the Token-Ring products in the United States focusing on detailed technical support and education for both customers and internal IBM field forces.*

xDSL Now and in the Future

The architecture of xDSL products in cooperation with local loop can improve Internet speed and deliver much needed bandwidth. This presentation will highlight previous demonstrations of xDSL working in cooperation with current local loop and SONET systems in other countries to give an accurate depiction of xDSL's importance in the development of the Internet, LANs, distance learning and network computing.

Nigel Cole, Vice President, New Business Development, Orckit Communications. *Prior to coming to the USA in 1995, Nigel Cole spent more than 10 years with British Telecom laboratories in the UK, where he was head of copper, wireless and satellite access technologies.*

Webcasting and Unified Messaging

A new breed of edge server is poised to provide ISPs with new opportunities to reach new subscribers with new services and features. The media server provides Internet access via any real-time communications device, including telephone, fax, pager and video, with high-quality streamed throughput. This presentation will describe how the unified messaging capabilities will bring new revenue-generating opportunities to ISPs.

Alan W. Wokas, President/CEO, MediaGate, Inc. *MediaGate is developing a line of DSP-based access and media servers for ISPs and corporate Intranets.*

Integrating Messaging

The emerging integrated messaging infrastructure and the synergy between phones, faxes, pagers and e-mail.

Robert F. Jones, Vice President, Product Management, ATT Networked Commerce Services. *Robert Jones is responsible for managing the profitability of all platforms related to the company's computer-based technologies, including Business Network Hosting, Web Site Services and SecureBuy.*

3:45 PM - 5:30 PM

New Technologies Panel: Virtual Private Networks

NSP-managed Virtual Private Networks (VPNs) are gaining distinction as a deployment alternative to traditional enterprise IS-managed remote access. This session discusses functionality and requirements of a VPN, including security, scalability, manageability and cost-effectiveness, in order to handle the transfer of mission-critical data over a service provider-managed, global public network infrastructure as if it were a private, leased line network.

Joe Diodati, Vice President, Marketing Enterprise, WAN Division, 3COM. *A veteran with more than 25 years of experience in management, marketing and sales, Diodati joined 3Com from Digi International where he was Vice President of Business Development and Corporate Marketing.*

Dial-up VPNs

Microsoft and other companies have recently announced software that offer the enterprises a significant cost savings by outsourcing their remote access to an ISP. This session will describe the required components to provide secure encrypted tunnels between the Windows desktop, across the Internet, and to the corporate back office.

Register for the conference by fax at 203-226-6976

Tom Caldwell, Program Manager, Internet Services Business Unit at Microsoft. *Tom Caldwell is responsible for the design and creation of network software targeted at ISPs. He is a contributing author to many books and periodicals including the international bestseller, "Internet Unleashed."*

HTTP Acceleration in the POP

Acceleration schemes will improve World Wide Web access by addressing HTTP inefficiencies and the inherent latency associated with Internet connections. It also promises significantly lower telco charges for Internet access. A review of the various optimization techniques available and discussion of their relative merits and the environments in which different optimization technologies are appropriate.

Shekhar Bhide, Director of Engineering, Shiva Corporation. *As director of engineering at Shiva's Cupertino (CA) office, Shekhar Bhide heads development of Shiva's acceleration technologies.*

Internet Fax

In 1996, the worldwide telephone bill for fax transmission is estimated to be \$38 billion. Smart ISPs and entrepreneurs are learning how to provide fax services via the Internet, to save their users money and profit for themselves. This session will explain why and how all ISPs will soon offer fax services and how entrepreneurs can profit by providing those services.

Maury Kauffman, CEO, The Kauffman Group. *Maury Kauffman is one of the world's leading authorities on enhanced fax. A contributor to Computer Telephony magazine, he has also written over 40 articles for such publications as Information Week, VAR Business, NetWare Solutions, Target Marketing, Voice Asia and Sales & Marketing Strategies.*

Metering, Measuring and Billing New Services

The overriding challenge for ISPs today is how to increase profits by, 1) adding new services; and, 2) building more flexibility into their online pricing structure. To be maximally profitable, ISPs must move away from the flat-rate billing policies currently in place and toward the per-unit-of-use structure traditionally used by telephone carriers.

John Fleming, Vice President of Marketing, NetCentric Corporation. *NetCentric is the leading provider of fax-over-the-Internet solutions and recently named by Upside magazine as one of the 50 hottest Internet startups.*

Friday, December 12

10:00 AM - 11:00 AM

Competing as an ISP - Strategies for Success

The ISP market is hypercompetitive. Successful players must adopt business models that can differentiate them while keeping an eye on key underlying economic drivers. Potential business models; execution challenges in customer acquisition, retention and support; the road ahead: Hi-bandwidth infrastructural choices

Sajai Krishnan, Consultant, Booz Allen & Hamilton

11:00 AM - 12:30 PM

ISP Strategies Panel

Moderator: Sajai Krishnan, Consultant, Booz Allen & Hamilton

Panelists: Charles Brewer, CEO, Mindspring; Dave Garrison, CEO, NetCom

1:30 PM - 3:00 PM

Bigger Isn't Always Better: More Bandwidth and Smarter Networks

After researching the drawbacks and benefits of bigger bandwidth, Sun Microsystems has found that smarter networks based on policy-based management — the idea that networks can be programmed to prioritize network access and implement user preferences — will enable the network to operate at maximum levels of efficiency.

Daniella Russo, Director, Network Appliance Marketing, Sun Microsystems Inc.

3:00 PM - 4:15 PM

Broadband Access: Increasing and Managing Bandwidth

Broadband access to the Internet — T1 speeds or higher — has become the Internet connection of choice for medium and large-sized corporations. As these companies continue to embrace the Internet, and upgrade their internal networks to support intranet/extranet applications, Internet Service Providers must implement solutions that assist users in meeting the performance goals associated with these applications.

Ashley Stephenson, President/CEO, Xedia. *As a member of the executive team which established Xedia, Ashley Stephenson became President/CEO of the company in August 1995. He is now responsible for leading Xedia's expansion beyond its initial successes in work-group Ethernet switching into the emerging market of Managed Broadband Access to the Internet.*

4:15 PM - 4:30 PM

Closing Remarks

**2-Day
Workshop**

Internet Finance Symposium

Two Days of Deals, Dollars, and Decisions
Where Wall Street Meets the Web™

Sponsored by:

THE NASDAQ STOCK MARKET™
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INTERNET
DAILY STOCK REPORT

Symposium Host: Steve Harmon, Vice President of Business Development/Senior Investment Analyst, Mecklermedia Corp., author of "The Internet Stock Report"

Meet the movers and shakers of the Internet and get their insights, the visionaries who founded companies such as Netscape, Yahoo!, CNET, Amazon.com and Marimba. Hear from leading venture capitalists as they reveal where their firms bet billions for tomorrow's hopefuls. See first-hand a select group of promising start ups present their products in a special "Hot Stuff Internet Showcase." Get the inside scoop on valuations, trends and picks from Wall Street's All-Star Analysts. Who should attend? Investors, entrepreneurs, analysts, media, industry executives, and anyone interested in capital connections. How do Wall Street analysts and business reporters size up Internet companies? What are their roles in creating winners and losers? How do they separate mere hype from fiction? And which is most important: The people, the strategy or the numbers?

Thursday, December 11

Internet Investor 101

UPSIDE
www.upside.com

How do Wall Street analysts and business reporters size up Internet companies? What are their roles in creating winners and losers? How do they separate mere hype from fiction? And which is most important: The people, the strategy or the numbers? *Upside Magazine's* "Internet Investor 101" provides a unique opportunity to learn the answers to these and other questions from top players in finance and journalism. Hosted by *Upside* Editor Richard Brandt, along with industry analyst and Internet Showcase producer David Coursey, this two-and-a-half hour event will be informative for both experienced and new investors who need to analyze Internet opportunities the way the pros do.

The event features a kick-off speech, talk show-style panels and lots of time for questions and answers.

10:00 AM - 10:10 AM

Opening Remarks

David Bunnell, CEO/Publisher, *Upside Media*;
David Coursey, Editor/Publisher, *coursey.com*;
Richard Brandt, Editor, *Upside Magazine*

10:10 AM - 10:30 AM

Kick-off: The Bluffers' Guide to Internet Investing

10:30 AM - 11:15 AM

Investment Panel: How We Evaluate Companies and What are the Results

Moderator: David Coursey, Editor/Publisher, *coursey.com*

Panelists: Jonathan H. Cohen, Managing Director, Technology Strategist and Internet/PC Software; Research Analyst, Union Bank of Switzerland Securities; J. William Gurley, Partner, Hummer Winblad Venture Partners; Richard G. Sherlund, Managing Director, Equity Markets Research, Goldman Sachs Corp.; Marc Usem, Equity Analyst, Solomon Brothers Inc.

11:15 AM - 12:00 PM

Media Panel: The Whole World's Watching — Internet Perception and the Media

Moderator: Richard Brandt, Editor, *Upside Magazine*

Panelists: David S. Jackson, San Francisco Bureau Chief, *Time Magazine*; David Kirkpatrick, Board of Editors, *Fortune*; Steven Levy, Senior Editor, *Newsweek*; Jesse Berst, Editorial Director, ZDNet Anchordesk

12:00 PM - 12:30 PM

Wrap-Up and Q&A

2:15 PM - 4:45 PM

Internet Start-up Venture Showcase

Show and tell from some of the most promising Internet start up firms hand-picked to present their business plans, product ideas and companies to the world. A must attend event for venture capitalists, individual investors wanting to see what's hot, entrepreneurs with an eye on 'what's out there,' and anyone who cares to see where the Web is headed.

Register for the conference by fax at 203-226-6976

In short, focused presentations, start-up Internet companies present their business plans to the audience and panel of venture capitalists and investors. In the hard-hitting give-and-take, you'll see the latest web business strategies and what it takes to get a new Internet company funded.

Co-moderated by some of the leading venture capitalists and investment gurus including Kleiner Perkins' Will Hearst, Accel Partners' Don Gooding, Goldman Sachs' Michael Parekh and Humner Winblad's Ann Winblad

Friday, December 12

10:00 AM - 11:15 AM

Internet Industry Overview - Or, Insanely Great Ideas Worth Billions

A multi-hundred billion dollar global economy based on Internet technologies emerges as businesses discover real money making opportunities based on providing value to customers and clients through the Web. These handful of players sit in the hot seat, providing software, content, and services to make it happen. Get the insights from them and see where your firm fits in the big picture. Bring your questions for the power Q&A session that's part of this event.

Panelists: Jerry Yang, Co-founder, Yahoo!; Kim Polese, Founder, Marimba; Halsey Minor, Founder, CNET; Jeff Bezos, Founder, Amazon.com; Jerry Kaplan, Founder, ONSALE.com

11:15 AM - 12:30 PM

Venture Capital Connections: Betting on Tomorrow's Web

The front lines of investors and venture capitalists live in the vision world that is tomorrow's Internet, looking for the next big thing, scouring for the killer app, sniffing out opportunity while avoiding pitfalls. These handful of firms invest billions, inventing tomorrow's Web in many ways. This isn't show me the money it's tell me where it is. Get the inside scoop from this motley group who read thousands of business plans annually and make decisions faster than the Internet moves in order to stay ahead of the pack. Q&A session also.

Panelists: George Zachary, Partner, Mohr Davidow Ventures; J. Neil Weintraut, Partner, 21st Century Internet Venture Partners; Mark Gorenberg, Partner, Hummer Winblad; Jim Orlando, BCE Corporate Venture Group

1:30 PM - 2:30 PM

All-Star Analysts: Internet Stock Values, Picks and Pans from the Leading Wall Street Internet Stock Investment Analysts

Market movers talk about what moves them to buy, hold or sell Internet stocks, where the market is headed, what kind of valuations companies get these days, who's hot and who's not in software, hardware, security, content, services, commerce. The straight stuff, straight from the market muses.

Panelists: Mary Meeker, Internet Analyst, Morgan Stanley; David Locke, Research Analyst, Volpe Brown; Sheryl Daniels, Vice President, Research Analyst, JP Morgan Securities, Inc.; Paul Noglows, Internet Analyst, Hambrecht & Quist; Michael Parekh, Analyst, Goldman Sachs

2:30 PM - 3:30 PM

NASDAQ's Going Public Workshop THE NASDAQ STOCK MARKET™ **NASDAQ**

How does a private company go about going public, that is selling stock to the public via the stock market such as NASDAQ? What are the steps to take, methods used to evaluate the company? Who should be involved? This is the "how to" guide for entrepreneurs who need to know about one of the most crucial elements of capital raising — how to go public. A must-attend session for anyone seeking capital ideas.

"Emphasizes the importance of strategic 'rethinking' in order to succeed in this constantly changing medium."

— Ronald A. Swenson,
Executive Vice President,
Amelar Communications, Inc.

FREE
CD-ROM of
proceedings with
every conference
registration
of \$595 or more
(value \$199!)

**2-Day
Workshop**

Java, Commerce and Security Day

Register for the conference by fax at 203-226-6976

Sun Microsystems has been the de facto core supplier for the Internet for 14 years and is now the server of choice as Internet technology moves to intranets and extranets. Its innovative Java technology has quickly become the standard adopted by virtually every hardware and software supplier for the Internet and corporate intranet implementations.

Add electronic commerce, remote access, and security to the mix and businesses gain a whole new way to achieve a competitive advantage. Find out how to leverage the explosion that Sun technology and its partners have brought to the marketplace. Explore how the impact of Java, e-commerce and Internet security can help you create breakaway business strategies.

Thursday, December 11

10:00 AM - 12:30 PM

Java: The Secure Environment

From the beginning, Java was developed with inherent security features. As Java becomes the standard computing platform for the Internet and corporate intranets, see how this technology has evolved from adding life to web pages to doing business-to-business transactions. Learn how electronic commerce, Java and security have become inseparable from the growth of the Internet, and how to leverage that growth for your business.

Success with Java: A Testimonial

Although Sun introduced Java technology, it's the partners and customers that are making Java hum. Hear how an industry leader has developed, designed and delivered a Java-enabled application for the real world.

2:15 PM - 4:45 PM

Protecting Your Information Assets

To ensure that your information assets are protected from unauthorized use, you must assess the risks of providing information over a network. Develop a network security strategy that gives you the right amount of security with the right amount of access to the right people.

Building Secure Virtual Private Networks

Access Control. Privacy. Authentication. Accountability. Management. All these elements go into developing a secure virtual private network. Learn how customers have created secure networks to protect their assets from internal and external threats.

Java Gets Down to Business

How is Java being used by real companies to do real business every day? This session examines how customers are using Java computing for day-to-day business and what applications of this technology add to the bottom line. See how to apply Internet/intranet solutions to your business from companies that already have.

"Excellent
content and
organization!
Very professional!"

-Victoria Lindem,
Product Manager,
Telia Telecomm AB,
Stockholm, Sweden

Morning Keynote

9:00 AM – 9:45 AM

Alan Baratz, President, JavaSoft, Sun Microsystems

10:00 AM – 11:00 AM

Session 211

Standalone Java Applications

When you say the word “Java” you naturally think of web based applications. Many people don’t realize that Java can be used to write web-independent applications. Unfortunately, unlike C, Perl, or shell languages, you cannot deploy Java out-of-the-box for such tasks. In order to write server-side utilities and user filters, a suitable environment must be established. This seminar describes how to use Java as an application language in place of Perl, C, or shell scripts.


- How to write a standalone Java application
- Defining the proper standalone environment
- Basic systems administration functions via Java

Kenneth J. Kranz, Director of Internet Services, Interaxis Corporation. *Kenneth Kranz is responsible for designing and creating Internet sites for a wide range of both web and standalone applications. Kranz was the principal designer of the Multiple Listings Service of LI web site. He has been an active freelance Unix consultant and author since 1991.*

10:00 AM – 11:00 AM

Session 212

What's Hot at the Show

 Internet World has a long history of being “the venue” for key product introductions. Two leading Internet experts will comb the exhibit floor for the most interesting, innovative and groundbreaking products making their first appearances at the New York show. Get a concentrated dose of Internet innovation in this information-packed forum.

- New products overview and a shortcut to key exhibits
- New technologies and Internet trends
- A tour of the exhibit floor and new products

Jane Dysart, Partner, Dysart & Jones Associates, Program Chair, Internet World Canada. *Dysart & Jones was founded in 1993 with a business commitment to providing professional consulting services to its customers in the areas of information management, direction, planning and change processes.*

Henry “Pete” Stair, President, Mycroft Information, LLC. *See session 133 on page 29 for bio bio.*

10:00 AM – 11:00 AM

Session 213

Electronic Commerce in Healthcare

Until recently, communication in the healthcare industry between managed care organizations, hospitals, insurance companies and healthcare providers involved costly paper, fax and EDI-based solutions. Today, leading MCOs are incorporating electronic commerce to automate the care management process. For managers in information-intensive industries, learn how the \$1 trillion healthcare industry has successfully adopted the Internet and how the solutions may apply to your business.

- Automating the care management processes
- Security “perception” issues in healthcare
- The evolution of electronic communication in managed care

Craig Muzilla, Vice President, Marketing and

Development, InStream Corp. *Craig Muzilla is the author of a forthcoming article in Electronic Commerce World. He was a pioneer in the area of smartforms and has spent countless hours educating the healthcare community about automation within the claims process.*

10:00 AM – 11:00 AM

Session 214

Everything You've Heard About Marketing Online is Wrong

The Internet is not TV. Content isn't always king, and banners aren't the only way to advertise. Instead of trying to force the Internet to be something it's not, perhaps there's a better way. In this seminar, Internet visionary Seth Godin describes real world e-mail techniques.


- Make real money and build your brand
- Accomplish your marketing goals online
- 10 secrets for Internet success

Seth Godin, Founder/President, Yoyodyne. *Seth Godin is the author of “eMarketing,” the first book on online marketing, as well as co-author of “The Guerrilla Marketing Handbook” and dozens of other books. Yoyodyne created the two most successful promotions in the history of the Net.*

10:00 AM – 11:00 AM

Session 215

Web Ads: Fifty Ways to Leave Your Message

 Marketing, sales, and customer service can all be done on a web site, but advertising must be done on other people's sites. This session looks at the many different kinds of ads on the Internet to help you determine which best fits your products and your brand. This survey of techniques with dozens of examples covers everything from classifieds to banners, direct e-mail to lists, and sponsorships to gaming. Specific advice zeros in on how to create and execute an online advertising strategy.

- Direct response vs. branding on the Internet
- Banner networks
- Delivering the right creative mix

Jim Sterne, President, Target Marketing.

See session 115 on page 27 for bio.

Conference Sessions

Thursday, December 11

Register on the Web at www.internet.com

Conference Sessions

Thursday, December 11

11:15 AM - 12:15 PM

Session 223

Intranet Content in the Financial Services Industry

Information is the lifeblood of the financial services industry. No other industry has been so quick to embrace intranets and extranets, and many firms have been left behind as their competitors moved customer relationships online. This session will use examples from the financial services industry to provide guidance to corporate intranet and extranet developers on how to use content for a strategic advantage.

- Developing and acquiring content
- Faster, better and cheaper information for executives
- ROIs for effective content delivery

Moderator: Tim Duncan, Managing Director, Story Street Partners. *Tim Duncan has written numerous articles for Computerworld and other finance and technology publications and co-authored a book for Matthew Bender on finance and technology which was published in 1995. He can also be seen on CNN Financial Network's new show, "Digital Jam" as an Internet Financial Analyst.*

Panelists: Julio Gomez, President, Gomez Advisors; John McIlvaine, Vice President, Marketing, Lexis-Nexis

11:15 AM - 12:15 PM

Session 224

The Kantor Group

If the McLaughlin Group were composed of the digerati, would they be on this panel? A free-form discussion of Internet issues from censorship to standards wars with a panel of the usual unusual suspects.

- The latest industry factoids
- Buzzwords and marketing hype
- The three most important new ideas

Moderator: Andrew Kantor, Editor-in-Chief, *Internet Shopper Magazine*. See session 113 on page 27 for bio.

11:15 AM - 12:15 PM

Session 225

The Business Side to Web Site Management

Creating a web site is a business management challenge as well as a technical and creative challenge. Lots of questions crop up, including: Who owns the site? Who is responsible for the content?

How do changes get put into place? This session reviews how the webmasters are getting their skunk-works web sites under control by implementing step-by-step approval procedures.

- The range of skills needed to run a web site
- Teaming the MIS and marketing departments
- The key steps to web content approvals

Jim Sterne, President, Target Marketing. See session 115 on page 27 for bio.

11:15 AM - 12:15 PM

Session 221

Making the Internet Safe for Business

Security is still an open problem facing Internet commerce. In a field rife with hyperbolic claims and counterclaims, with a bewildering number of conflicting and overlapping mechanisms, learn how much security is absolutely necessary, what products and protocols are coming to market, and how to craft a successful electronic commerce security strategy.

- Security protocols proposed and in use
- Payment card security protocols and SET
- Cryptography and the Net

Allan Schiffman, Chief Technology Officer, Terisa Systems. *Alan Schiffman, who is responsible for product strategy and development at Terisa Systems, lectures frequently on Internet security, has contributed to the design of several well-known security protocols (notably S-HTTP and SET) and holds several patents.*

11:15 AM - 12:15 PM

Session 222

Tech Debate: PCs vs. NCs

The newest workstation innovation is the Network Computer, a stripped down CPU and monitor that links to server-based storage for applications and data. Are NCs appropriate for large-scale enterprise networks? Do they have a place in mixed sites and smaller departmental Nets? On their side of the argument, are large networks of PCs getting too expensive to support and upgrade? Is PC software too fat for the LAN? Leading proponents of both sides face off in a debate on the future of the corporate desktop.

- What's the TCO (Total Cost of Ownership)?
- Can the Internet and LAN support the NC?
- Will users accept LAN-dependent computers?

Moderator: James Sinclair. *A former attorney and commercial real estate consultant, Joseph Sinclair is a contributing Editor for the Multimedia Reporter and the author of "Creating Cool Databases," "Intranet vs. Lotus Notes," "Java Web Magic," "Developing Web Sites for TV-HTML," and "Deploying NCs on a Corporate LAN."*

Register for the conference by fax at 203-226-6976

Afternoon Keynote

1:15 PM - 2:00 PM

Michael Dell
Founder/Chairman
Dell Computer

2:15 PM - 3:45 PM

Session 231

Internet and Intranet Firewalls: Black Art vs. Industry Standards



Internet security is increasingly important as electronic commerce, intranets and mission-critical high availability web sites become the norm. A new paradigm of active security combines misuse detection, vulnerability scanners, and encryption to secure a network. Learn

why firewalls fall short, what security functions and tools are required for better protection against hackers, and how security is part of ongoing systems management.

- Encryption, firewalls, and intrusion detection
- Web site monitoring techniques
- Developing your web security policy

Steve Smaha, Founder/President, Haystack Labs, Inc.

Haystack Labs security products are based on a third-generation, patented technology that evolved out of work done by Smaha for the Air Force, and includes the world's largest database of known attack signatures.

2:15 PM - 3:45 PM

Session 232

How to Conquer the World

Non-technical, information-packed and fun, this 90-minute multimedia seminar reveals how to use the Internet to start and grow an export business and describes the global trade resources available online.

Garrett Wasny, Analyst/Columnist/Webmaster. *Garrett Wasny is an award-winning international trade columnist, Webmaster, Internet trainer, and Certified Management Consultant (CMC) in Vancouver, Canada. He has published over 80 articles on international trade and business topics for such publications as the Financial Post, Access Americas, Global Production, and Expansion Management.*

2:15 PM - 3:45 PM

Session 233

Intranet Strategies: The Kings of Content Face Off

This unique session brings together the leading providers of strategic business information for corporate Internets and intranets. Top executives from six major publishers and online services share their views on distributing strategic content and business information over corporate intranets and details on the services and products their companies offer. Content remains the most critical element of success for any intranet project. What valuable content and information can you offer on your intranet channels? How do leading information suppliers plan to deal with this new medium?

- Ranking the available products and services
- Acquiring content for internal use
- Integrating information feeds on the intranet

Moderator: Tim Duncan, Managing Director, Story Street Partners. *See session 223 on page 38 for bio.*

Panelists: Don McLagan, President, Desktop Data, Inc.; Gary Mueller, President/CEO, Internet Securities; Thomas Henry, President/CEO, Quote.com; Andrew Nibley, Executive Vice President, Reuters New Media; John Gilbride, Thomson Financial Services

2:15 PM - 3:45 PM

Session 234

Advertising on the Internet: Madison Avenue Speaks! Part One



If your business depends on banner advertising revenue for all or part of its success you can't afford to miss what the Internet Advertising Bureau (IAB) has to say about the future of online advertising. This dynamic open session will include a panel of leading advertisers who will "tell all" and offer wisdom on how some of Madison Avenue's biggest spenders view the Internet as it continues to evolve. The session will also be highlighted with new information on Internet advertising pricing, demographics, creative, strategic applications and success stories. *This session continues with Part Two at 4:00 PM. See session 244.*

2:15 PM - 3:45 PM

Session 235

Web Demographics and Web Auditing



Popular Internet World speakers Sachs and Stair describe the key sources of web demographics and how to interpret the data. They'll also show how to track your site's visitors and measure their key activities using your server log. Finally, you will learn how successful companies use this information to make their web sites more inviting, engaging and profitable.

- The best web demographic sources
- Tracking and measuring visits and visitors
- Finding the most current information about the Web
- Understanding and interpreting the data

David Sachs, Assistant Dean, Pace University.

See session 133 on page 29 for bio.

Henry "Pete" Stair, President, Mycroft Information, LLC.

See session 133 on page 29 for bio.

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4:00 PM - 5:30 PM

Session 241

CORBA and the Web

In the future of the Web, both intranets and legacy systems will need to evolve into fully distributed systems. CORBA provides a basic framework for turning enterprise applications into distributed components. These reusable components will be the building blocks of tomorrow's Web. Explore how to leverage the Internet's open standards such as Java and CORBA to transform legacy applications into enterprise application components.

- The benefits of CORBA and the Web
- Examples of CORBA and web applications
- Developing a CORBA migration path

Dr. Bruce H. Cottman, Founder/CEO, I-Kinetics; Founder/Chairman, ComponentWare Consortium.

Dr. Cottman has been designing and marketing distributed applications for 18 years at such organizations as M.I.T. Lincoln Laboratory, ETI, Thomson Financial, Fidelity Investments and Symbiotics. In 1991, Dr. Cottman became a CORBA convert, sold his Symbiotics holdings and formed I-Kinetics, a leading provider of CORBA-based enterprise component software and tools.

4:00 PM - 5:30 PM

Session 242

The Art and Folly of Content Re-purposing



The initial vision of web-based publishing was that existing publishers would reap new revenues from old content, "re-purposing" it for an electronic audience. Somewhere between the vision and the

implementation, the re-purposing paradigm shifted toward adding original content.

- The publishing industry's Web experience
- How off-line publishers should approach the Web
- Writing for the Web

Jill Ellsworth, Ph.D., Senior Partner, Oak Ridge Research. See session 143 on page 30 for bio.

4:00 PM - 5:30 PM

Session 243

Digital Marketing: New Frontiers in Web Commerce

Mastering digital marketing will be the key that drives or stalls the ultimate success of companies seeking to exploit electronic commerce. In its full realization, digital marketing interconnects all networks, companies, media and processes — moving rapidly beyond electronic connections, to transform individual and shared business practices. Learn how interactive brand management delivers widespread brand awareness, increased marketshare and turbo-charged revenues to digitally-aware companies.

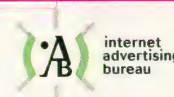
- Web sites that work
- Safe and reliable electronic commerce
- Putting the Web into your business plan

Larry Smith, President, US Interactive. A marketing strategist with over 17 years of consumer marketing expertise, Larry Smith has been the CEO of US Interactive since its founding in 1991. Smith's technology experience includes MCI Communications and the network MCI brand, Hayes Microcomputer Products, Symbol Technologies, France Telecom, Infotron Services Corp., software INTRO (an online computer software reseller), and the PC units of both IBM and Digital Equipment Corporation.

4:00 PM - 5:30 PM

Session 244

Advertising on the Internet: Madison Avenue Speaks! Part Two



The Internet Advertising Bureau (IAB) presents Part Two of a panel discussion featuring leading advertisers who will "tell all." This session begins with Part One at 2:15 PM. See session 234.

4:00 PM - 5:30 PM

Session 245

Distance Education on the Internet

Education "anytime, anywhere" is now a reality. Using technology provided by the Internet and intranets, universities and corporations now provide education and training to their people located around the globe, at times and places that work best for each individual. Sachs and Stair

share the results of their work in this area for the past two years as they have provided "on demand" education and training to adults located around the globe who need to keep current or participate in fully accredited certificate and degree programs wherever they are and whenever they wish.

- New models of technical education
- Electronic classroom tools and techniques
- Accreditation and tracking

David Sachs, Assistant Dean, Pace University.

See session 133 on page 29 for bio.

Henry "Pete" Stair, President, Mycroft Information, LLC.

See session 133 on page 29 for bio.

On the Internet, electronic tools for finding, organizing and distributing data give us unprecedented power over huge volumes of ideas and information. In this all-day workshop on knowledge management issues, key developers and visionaries describe the latest tools for organizing knowledge in the enterprise and on the Internet. Leading information practitioners discuss the best practices in both searching and posting strategies to find — and get found — on the Web.

Friday, December 12

10:00 AM – 10:45 AM

Opening Remarks

Key issues in managing knowledge in the enterprise and on the global Internet.

Ron Weissman, Vice President, Verity, Inc.

10:45 AM – 12:30 PM

Intranet Knowledge Issues

The intranet brings the power and affordability of web information management to the enterprise. A panel of developers describes the key ingredients to successful enterprise knowledge management, discusses the technological and commercial requirements, and outlines some best practices for organizing information online.

Organizational Learning: Steven L. Telleen, Ph.D., President, iorg.com

Knowledge Infrastructure: Tom Gruber, Founder/CTO, Intraspect Software. *Tom Gruber brings over 15 years experience as a high-tech visionary to Intraspect. Known as a leading innovator in intelligent systems and knowledge sharing technologies, Gruber is responsible for Intraspect's future technical direction and is chief designer and architect for the Intraspect Knowledge Management System.*

Intranet Spidering: Philip L. Green, President, Inmagic, Inc.

External Knowledge Integration: Dan Schimmel, President, OneSource Information Services. *Dan Schimmel's responsibilities include planning company strategic direction, overall management and business development. His experience includes directing the One Source division while at Lotus Development Corporation and the marketing of two of Lotus' award-winning software products — Freelance Graphics and Organizer.*

1:30 PM – 3:00 PM

Getting Found on the Web

What is the proper metaphor to use when designing an electronic marketing campaign for the Internet? Is it like print advertising? Is it like broadcast media? Is it like direct mail? One of the pioneers of web marketing describes the electronic information landscape and provides practical advice for establishing an effective presence online.

Knowledge Management and Search Strategies Day

John Audette, Founder/President, Multimedia Marketing Group, Inc. *As president of MMMG, John Audette lives and works at the front lines of online marketing. He moderates the prestigious Internet-Sales Discussion List which publishes the I-Sales Digest that is sent daily to over 6,000 subscribers from 65 countries and is the founder of Internet News Bureau, one of the pre-eminent online press release clearinghouses.*

3:00 PM – 4:30 PM

Gathering Intelligence on the Net

While it's not very well organized yet, the Internet does offer business users an unparalleled abundance of information on companies, technologies and markets. Conducting research on the Net means more than just scanning text through a search engine, however. This session covers the whole Internet research landscape and provides important insights into business research online.

- When — and when NOT — to search the Net
- Search engines, lists, e-mail, usenet and push technology
- Search strategies and benchmarking

Jennifer Kaplan, Director of Client Services, Chase Online Marketing Strategies. *Jennifer Kaplan has more than ten years of experience consulting on strategy, management and organization with clients such as AT&T, Time Warner, Chubb and Merrill Lynch.*



Register on the Web at www.internet.com

Internet Document Day

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REPORT

Moderator: Camille Roy, Market Research Manager, IntraNet Solutions

Friday, December 12

10:00 AM - 11:15 AM

Doing Business Smarter, Not Harder — Internet Print and Publishing Trends

Whether authoring new material or re-purposing existing materials for distribution via the Internet and corporate intranets, web development and electronic distribution technologies are expanding. Drawing on case studies and his extensive experience in digital documents, Adobe's John Kunze reviews the management and user challenges in creating a publishing infrastructure to build effective communication for Internet and intranet needs. What is the importance of integrated architectures for print and electronic documents? What are the distinctions between Internet printing and publishing? And how have successful companies migrated from paper to electronic documents over the Internet?

John H. Kunze, Vice President/General Manager, Internet Products Division, Adobe Systems Inc. *John Kunze is responsible for Adobe's Internet Products Division which currently includes PageMill, SiteMill, Acrobat, Persuasion and a new presentation authoring technology for the Internet code-named "Web Presenter."*

11:15 AM - 12:30 PM

Internet Technologies Panel

Key Internet document developers discuss emerging standards and how to implement systems that help businesses effectively take advantage of Internet, intranet, and extranet collaborative processes for print creation and distribution.

Imaging: Srinivas Sukumar, General Manager, Internet Imaging Operations, Hewlett-Packard Co.

Global Distributed Printing: John Kavazanjian, Vice President/General Manager, Network Software Business Team, Xerox Corporation; Bob Aronoff, Director of Strategic Initiatives and New Business Opportunities, Applied Imaging Division, Kodak

Simple Web Printing (SWP Protocol): Tim Campbell, R&D Manager, Web Printing Program, Laserjet Solution Group, Hewlett-Packard Co.

1:30 PM - 2:30 PM

Practitioner Panel

Learn from users of specialized systems for "audience of one" custom printing applications as they tie the Net, the database and the printed page together. From building high volume custom financial prospectuses to creating short run books to personalizing marketing materials, the panelists discuss examples of working solutions in this exciting new direction for the Internet-enabled print industry.

Moderator: James Cannata, Director of New Media, Royal Impressions

Panelists: Joel Hoeftle, President, Digital Marketing; Jeffrey Hill, Vice President of Technology, The KMS Companies; John Stempeck, Vice President, Distributed Network Applications, Production Systems Group, Xerox Corporation; Ho John Lee R&D Architecture Manager, Internet Imaging Operations, Hewlett-Packard Co.

2:30 PM - 4:00 PM

Document Management Panel

While businesses often spend 1% of gross revenues on IT budgets, some industry analysts estimate that up to 15% of gross revenues go to managing document-based information. Document management expert Frank Gilbane leads a panel of vendors describing the needs, the markets and the solutions and how smart companies are taking advantage of the Internet to manage the "corporate knowledgebase."

Moderator: Frank Gilbane, Publisher, *The Gilbane Report*, CAP Ventures

Panelists: Louis H. Carpenter Jr., Senior Vice President, Worldwide Marketing, FileNet Corp.; Jeffrey Miller, President/CEO, Documentum Inc.; Bob Olsen, President/CEO, IntraNet Solutions; Brett Newbold, President/CEO, Open Text Corporation; Ann Palermo, Vice President, Worldwide Marketing, PC DOCS

4:00 PM - 4:30 PM

Closing Remarks: Documents on the Net

David Weinberger, President, Evident Marketing, Inc. *A publishing and information industry veteran, David Weinberger speaks frequently on the future of documents and the effect of the Web on how businesses run (the hyperlinked organization).*

Look for these icons throughout session descriptions:



- Indicates highest rated speaker according to previous conference attendees.

TOP
10

- Indicates session attracts the largest Internet World audiences.

Only the highest rated speakers and sessions were retained for this year's program. All other speakers and sessions listed are new for 1997.

Register for the conference by fax at 203-226-6976

Morning Keynote

9:00 AM – 9:45 AM

John Sculley, CEO, Live Picture

10:00 AM – 11:00 AM

Session 311

Java Applets: A to Z

Java applets are at the center of Java development efforts. Having such power on a web page makes them very attractive. Creating worlds inside this somewhat restrictive environment is always a challenge, yet Java applets have the power to connect to the far reaches of the corporate enterprise. Integrating legacy mainframe data onto the web page as well as beautifully illustrating business concepts with dancing cartoons and interactive charts, Java was designed to meet the rapidly changing challenges of today's technological world.

- Single-server security restriction vs. roaming the world
- Applets that "talk" to each other across frames and even browsers
- Lightweight applets that access databases and have powerful computing power
- Store information on the local machine, beyond cookies

Art Clancy, CTO, ORBAware Inc. *Art Clancy's special talents include architecting distributed object systems, primarily in Java and CORBA, which he has been doing since January of 1996. He has been an OOA & OOD since 1992 and OOP since 1988. He is currently writing a book entitled "Core Java.CORBA."*

10:00 AM – 11:00 AM

Session 312

Inside the Silicon Alley Web Scene

Hailed by the trade and popular press as the creative epicenter of the web development industry, Manhattan's Silicon Alley has become as much about "the hype" as it has about the hundreds of developers creating the most popular zines, online commerce centers, databases and guides dotting the digital landscape. Get a behind the scenes look at Silicon Alley from the diverse perspective of individuals working in this evolving community.

- Developers, designers and content providers
- Political, economic and regulatory issues
- The new media business employment outlook

Moderators: JP Frenza, Author, "Web New Media Pricing Guide." *In addition to authoring business books on the computer industry, J.P. Frenza is the director of the Earth Pledge Foundation's Division for Sustainable Media, a full-service Internet agency that produces World Wide Web sites for non-profit organizations and socially responsible businesses.*

Panelists: Cherry Arnold, Director, Marketing Communications, Avalanche Systems; Laura Hill, President, Able Associates, Inc.; David Pakman, Senior Director of Business Development, N2K; Lori Schwab, Executive Director, New York New Media Association; Deanna Vincent, Editor-in-Chief, CitySearch New York; Tom Watson, Co-founder/editor, @NY — The New York Internet Newsletter

Conference Sessions

Friday, December 12

10:00 AM – 11:00 AM

Session 313

Price Inefficiency in Internet Advertising

Most advertisers would like to maximize the impact of each ad dollar spent; however, unfamiliarity with new media causes many agencies and advertisers to overpay and/or misspend. This session will identify the major inefficiencies in a market in which high CPMs have co-existed with vast amounts of unsold space. It will point out how one advertiser may buy identical ad impressions as another for a fraction of the cost, and teach advertisers how to avoid these mistakes; and how to allocate and dollars to highly cost effective ad purchases.

- Evaluate the cost efficiency of reaching your target market
- How ad pricing strategies commonly used by web publishers can water down the impact of your ad dollar
- Be better prepared to avoid overpaying for Internet space

James Frith, Jr., President/CEO, Adbot, Inc. *Since 1988, Frith, Jr.'s. earned income has come from bringing greater price efficiency to extremely inefficient markets as an auctioneer for intangible assets. His auction system brought much needed pricing efficiency to the otherwise grossly inefficient secondary market for limited partnerships.*

10:00 AM – 11:00 AM

Session 314

Tiger Teams and Ethical Hacking

Many companies have found network penetration analysis (a.k.a. Tiger Team attacks) to be an invaluable tool in improving network and host security, raising organization-wide awareness of security exposures, and in gaining practical insights into their network vulnerabilities. Attendees to this session will learn how penetration analysis can be used to improve the security of their systems and networks, penetration testing approaches, and how to evaluate companies which perform this service.

- What penetration testing can tell you
- How typical attackers work
- Understanding your objectives and planning testing scenarios
- How to structure testing to catalyze improvement
- What to look for in a firms offering penetration testing systems

Brad Johnson, Principal, SystemsExperts Corporation.

Brad Johnson is a well known authority in the field of distributed systems. He has participated in seminal industry initiatives like the Open Software Foundation, X/Open, and the IETF, and has published extensively about open systems.

Register on the Web at www.internet.com

Conference Sessions

Friday, December 12

Register for the conference by fax at 203-226-6976

10:00 AM - 11:00 AM

Session 315

Web PR: Building the Buzz...

Why do some web launches and web events get online coverage, news, and reviews, while others don't? How do you make your launch or event stand out and get noticed? Far more than simply submitting to search engines and directories, web site awareness building should focus on matching your site's content to many different resource discovery outlets, and to the media and end users who represent a legitimate chance for coverage and action.

- Recognizing site coverage opportunities
- Positioning your content and message
- Finding "smart" resources to promote your launch
- Writing effectively for search engines

Eric Ward, President, The WardGroup/NetPOST.

Eric Ward founded the Web's first awareness-building service for web sites, NetPOST, in 1994. A frequent speaker on web event promotion, he publishes the URLwire news matching service for Internet editors and site reviewers and was recently named by Websight Magazine as one of the world's 100 most influential people in the Internet.

11:15 AM - 12:15 PM

Session 321

TrueDoc: The New Web Typography

Bitstream's TrueDoc technology incorporated in the Netscape browser enables the royalty-free downloading of any typefaces, including non-English characters, into web pages. In this basic session for web designers and developers, learn how to use TrueDoc and Cascading Style Sheets to improve the graphic effect of your web pages.

- Configuring and serving TrueDoc fonts
- Web page typography effects
- Implementing Cascading Style Sheets

Joseph Sinclair, Author, Sinclair Associates.

See session 222 on page 38 for bio.

11:15 AM - 12:15 PM

Session 322

Empires in Space:

The Ultimate Power of Online Community

Internet communities are emerging as powerful centers for commerce and communications in which members enhance their online and real-world lives through the support, shared

wisdom, comic relief and camaraderie they share with others. Internet pioneer David Bohnett, founder of Geocities, describes the new virtual culture and the innovative ways being developed to foster the spirit of community that is so vital to the Net.

- How communities shape the direction and growth of commerce
- Building a virtual community
- Innovative businesses in the virtual space

David Bohnett, Founder/CEO, GeoCities.

Bohnett launched GeoCities in November 1994 to allow users to share their thoughts, hobbies, expertise and opinions with others in a community on the Web. GeoCities has pioneered a unique "homesteading" program in which surfers set up and maintain a home page free of charge in one of 34 themed communities.

11:15 AM - 12:15 PM

Session 323

Gambling Online

As the first online casinos open for business, join *Internet World's* "Your Own Time" columnist Eric Berlin and a panel of experts as they examine this new industry. Can online casinos work? Can they work too well? Will legal challenges stop them all in their tracks? Will they compete with the Las Vegas strip? Expect a lively discussion and bring your own questions for the panel.

- The online casino landscape
- Games and gaming technology
- Government regulation, taxation and control

Moderator: Eric Berlin, Contributing Editor, Internet World Magazine.

11:15 AM - 12:15 PM

Session 324

Performance and Usage Analysis: Understanding Your Online Customer

Perhaps the most fundamental rule in business today is to "Understand your customer!" This maxim rings particularly true in the online realm, as the Web represents a completely new form of customer interaction.

- How web sites afford unprecedented volumes of raw data that quantitatively describe customer behavior and customer experience
- How to better understand your site's responsiveness and users' navigation
- How performance variations affect your overall traffic
- An explanation of recently deployed enabling technologies
- Prevalent trends in the usage analysis industry
- Fast and simple methods for better understanding online customer

Matthew Cutler, Founder/Director of Business

Development, net.Genesis Corporation.

Cutler leads net.Genesis' strategic product planning and marketplace education efforts. He also serves as president of the Webmasters' Guild

11:15 AM - 12:15 PM

Session 325

Internet Accessibility Issues

With more products and services available on the Web, it's more important than ever that access is available to the largest audience possible. What are the challenges opening the Internet to the largest number of users? How can web sites be more accessible and Internet access more affordable? Can we develop strategies so that everyone get the benefit of being online?

- General accessibility issues
- ISP issues
- Web site accessibility issues

Michael R. Burks, Senior Technical Specialist, AT&T Worldnet Services. *Burks, a computer professional with close to 20 years of experience, has worked on everything from mainframes to micros, and has experience with electronic messaging, electronic commerce and online services.*

1:15 PM - 2:45 PM

Session 331

Quicktime VR Authoring

Apple's Quicktime VR panoramic image building tools are used for selling cars, showing apartments for rent, promoting rock concerts and many other applications. In this tutorial session for web designers and developers, you'll learn how to create Quicktime VR scenes and incorporate them into your web pages.

- Image acquisition and preparation
- Quicktime VR authoring tools
- Storage, bandwidth and optimization

David Palermo, Product Manager, Apple Computer

1:15 PM - 2:45 PM

Session 332

The 3.5.7 for Maximizing Your Business Online



The 3.5.7 is an Internet business model that's easy to apply regardless of how small or how large an Internet presence you have — or plan to have. This dynamic presentation gives you real world examples and practical guidelines that you can put to work immediately.

- 3 steps to a better focus
- How to impact your bottom line
- A 5-dimensional strategic approach
- A 7-point tactical guide

Craig Settles, Senior Strategist, Successful Marketing Strategies. *Craig is one of the pioneers in cyber marketing, working to set new standards for creativity in this field. He has spearheaded projects on behalf of AT&T, Tektronics, Symantec, Lotus, Campbell Services, and other high-tech companies to help them leverage cyberspace as an effective marketing tool.*

1:15 PM - 2:45 PM

Session 333

Creating a Channel for Software Distribution on the Internet

The Internet offers a radical new way to sell and ship software. In this panel of digital distribution visionaries, you'll see how strategies like limited time demos and "try-and-

buy" deals can be used to reach new customers in both consumer and business markets.

- Software wrappers and timers
- Online demos and teasers
- Software downloading experiences

Moderator: Matthew Barzun, Vice President, Software Services, CNET: The Computer Network. *As Vice President, Matthew Barzun has spearheaded the purchase and development of the Virtual Software Library (VSL) — a web-based software search engine, which he has grown into four Web services that help users find, learn about, and download software on the Internet.*

1:15 PM - 2:45 PM

Session 334

Why and How to Link SAP R/3 to Your Internet

The reasons for linking SAP R/3 (or similar systems) to intranets, from re-engineering potentials to ergonomics aspects and an overview of how this can be done.

- How to link SAP R/3 to intranet systems
- The effects of this linkage
- Which target groups in your company will profit from such an implementation

Michael Rebstock, Ph.D., Partner, IMIC GmbH.

Michael Rebstock brings numerous years of teaching with experience in CSC and SAP. His professional experience consists of consulting in sales force automation, service force automation, EDI, Internet-based applications and SAP-Internet frontends. Rebstock has also authored several publications in business administration and business computing.

1:15 PM - 2:45 PM

Session 335

Linking Your Print Catalog to Your Web Site



In this nuts-and-bolts tutorial, you'll see how Quark Xtensions, relational databases and rapid application development tools can support dynamic and real-time updatable catalogs both in print and online.

- Database development issues
- Synchronizing Quark and HTML
- Print and web "look and feel"

Stephan Spencer, Founder/President, Internet Concepts LLC. *Spencer's company, Internet Concepts, applies data warehousing and search engine experience to create innovative Internet/intranet sites with real-time response, web access to corporate knowledge bases, and one-to-one marketing.*

Chris Laing, Technical and Managing Director, MC Research, Ltd. *MC Research is a UK-based company that specializes in data publishing solutions for QuarkXPress, featuring two way exchange of information, and incorporating data from a wide variety of sources.*

Conference Sessions
Friday, December 12

Conference Sessions

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Register for the conference by fax at 203-226-6976

3:00 PM – 4:30 PM

Session 341

Internet Video



Deploying video over today's Internet is like teaching a dog to sing — it's unpleasant and it annoys the dog. Nevertheless, advances in compression technology, new bandwidth reservation protocols, streaming techniques and the promise of more robust backbones and higher-capacity delivery systems make it likely to arrive sooner than you think. A

panel of leading developers shows how far we've come to TV on the Net.

- Workstation video trends
- Bandwidth requirements
- Intranet applications

Moderator: Stephan Spencer, Founder/President, Internet Concepts LLC. *See session 335 on page 45 for bio.*

Panelists: Jerry Lewis, Product Marketing Manager, Graphics Division, Adobe Systems; Vinay Kumar, CTO, ICast; Staffan Ericsson, Chairman, Vivo Software; Pete Mountanos, CEO, Vxtreme.

3:00 PM – 4:30 PM

Session 342

Creating an Interactive Document with Dynamic HTML

Interactive documents are web pages that display personalized content using style cookies and Dynamic HTML on Netscape Navigator and Microsoft's Internet Explorer. This seminar will walk through all the steps in creating an interactive document, and will demonstrate the technique for various uses such as an online magazine, an instructional manual, and a product demonstration.

- Creating online interactive documents
- Building reusable document components
- Applying Dynamic HTML to customize pages

Shelley Powers, President/Author, YASD. *Shelley Powers is co-author of books on PowerBuilder, JavaScript, and CGI using Perl, and has a new book on Dynamic HTML due out this fall. She writes for several online magazines, maintains her own web site and works as a development consultant and trainer.*

3:00 PM – 4:30 PM

Session 343

Strategic Web Marketing

In this dynamic, high content session, marketing expert Mark Austin Schmidt will describe the false marketing assumptions that keep many web sites from achieving success. He'll reveal the



paradigm and uncover the secrets of those that work. You will learn the best ways to strategically position your site, the methods to locate the best links and the acceptable uses of e-mail, and you'll get dozens of fresh marketing ideas, tips and techniques.

- Balancing content and image
- Free marketing resources online
- Web marketing tips and tricks

Mark Austin Schmidt, President, Internet Research Group.

Mark Austin Schmidt has been involved in sales and marketing for over two decades. He has extensive experience designing and developing marketing and sales strategies for a wide variety of products and services and has worked with over 90% of the Fortune 500 companies.

3:00 PM – 4:30 PM

Session 344

Convergence of the TV, PC, and the Web



With a phone line and a computer we can access almost anyplace in the world about any subject in the world. Everyone has the ability to become an author, broadcaster, and content developer. What happens if we are to combine the three inventions that have changed

our lives? What if we could watch TV on our computer, view web pages on our TV, have web pages transmitted as part of the broadcaster signal?

- How the way we watch TV, use a computer, and access the Internet will change over the next few years
- Transmitting data through a television broadcast using video blanking interval (VBI)
- Using a personal computer to watch television and electronic program guides
- How broadcasters want to become more interactive with their viewers

Kenneth Stober, International Marketing Manager, Broadcast Products Group, Intel Corporation. *Ken Stober has been with Intel since 1990. He is currently the International Marketing Manager for InterCast™ technology. The InterCast technology allows PC users to view TV broadcasts and associated HTML (Internet Web) pages without the need of an Internet connection.*

3:00 PM – 4:30 PM

Session 345

Beyond Publishing: Interactive Tools for Business Development



This session will reveal the best practices through practical case studies that will help you form profitable relationships with your customers and prospects.

- Differentiate your product/service offering from your competitors
- Revenue/lead generation opportunities to build your business
- Collaboration and communication — attract and retain customers

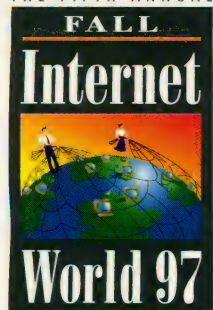
Stephen Schnall, General Manager, Bowne Internet Solutions New York. *Steve Schnall is a pioneer in the movement to produce bottom-line business benefits by utilizing the Internet.*

Larry Kesslin, President, Let's Talk Business Network, Inc.

Larry Kesslin brings his creative fire and experience in sales, marketing, and technology, as well as an understanding of the corporate world.

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THE FIFTH ANNUAL



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Jacob K. Javits
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Reservations received by mail must be postmarked by November 3, 1997; after this date, rooms or rates cannot be guaranteed. Room assignments will be made in order of receipt. If all hotel preferences are not available, you will be assigned the next closest available hotel. If rate requested is not available, the next available rate will be assigned. All changes or cancellations must be sent to Lee Travel in writing before November 26, 1997. After this date, you must contact your hotel directly.

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1535 Broadway • Rates: Single/Double \$264
(Min Arrival Pattern Mon - Fri)

Ameritania Hotel
1701 Broadway • Rates: Single/Double \$215

Amsterdam Court Hotel
226 West 50th Street • Rates: Single/Double \$195

Crowne Plaza Manhattan*
1605 Broadway and 49th Street • Rates: Single/Double \$299
(Minimum 4-night stay)

Crowne Plaza U.N.
304 East 42nd Street • Rates: Single/Double \$269

Doral Court
130 East 39th Street • Rates: Single/Double \$230

Doral Inn
541 Lexington Avenue • Rates: Single/Double \$209

Doral Tuscany
120 East 39th Street • Rates: Single/Double \$240

Double Tree Suites
1568 Broadway • Rates: Single/Double \$299-\$319
(Minimum 4-night stay)

East Side Inn
201 East 24th Street • Rates: Single/Double \$197

Flatotel
135 West 52nd Street • Rates: Suite \$279

The Gorham
135 West 55th Street • Rates: Suite \$285

Grand Hyatt
Park Avenue at Grand Central • Rates: Single/Double \$305

Hotel Beverly
125 East 50th Street • Rates: Suite \$209

Hotel Pennsylvania
401 7th Avenue • Rates: Single/Double \$135
(Minimum 4-night stay)

Marriott Financial
85 West Street • Rates: Single/Double \$299

Marriott World Trade
3 World Trade Center • Rates: Single/Double \$329

The Mayflower Hotel
15 Central Park West • Rates: Suite \$210

Milford Plaza
270 West 45th Street • Rates: Single/Double \$149-\$164

New York Hilton & Towers
1335 Avenue of the Americas • Rates: Single/Double \$325
(Sunday arrival)

Novotel
226 West 52nd Street • Rates: Single/Double \$269

Park Central Hotel
870 7th Avenue • Rates: Single/Double \$155-\$184

The Roosevelt
45th and Madison • Rates: Single/Double \$280
(Non-Refundable deposit after 11/10)

St. Moritz on the Park
50 Central Park South at 6th Avenue
Rates: Single/Double \$225-\$250

Sheraton Hotel & Towers
811 7th Ave. at 52nd St. • Rates: Single/Double \$280-\$310

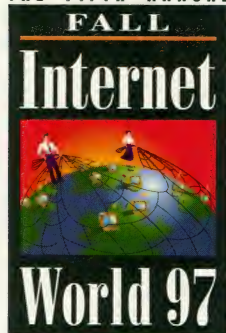
The Skyline Hotel
725 Tenth Avenue • Rates: Single/Double \$139

U.N. Park Hyatt
1 U.N. Plaza • Rates: Single/Double \$330-\$380

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registration information

THE FIFTH ANNUAL



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Included in conference registration packages:

PLATINUM BONUS-PAK: Includes admission to the 3,000 booth exhibit hall Wednesday through Friday, all keynote sessions and special events, access to the Internet World Café, the Conference CD-ROM (full transcripts of every session in searchable form), show t-shirt and tote bag.

GOLD BONUS-PAK: Includes the same as Platinum but without the CD-ROM.

CONFIRMATION AND BADGES

If your conference registration is received by November 21, you will receive your conference badge by mail prior to the show. If registration is received after November 21, please pick up your badge at the show.

GROUP DISCOUNTS

Bring your entire development team! Discounts are available for group bookings of five or more persons. Contact our Registration Department at 1-800-MECKLER (1-800-632-5537) or 203-226-6967.

GOVERNMENT PURCHASE ORDERS

Mecklermedia accepts official government training orders in lieu of advance payment. Purchase order must accompany registration form.

CANCELLATIONS AND SUBSTITUTIONS

If you must cancel for any reason, notify our Registration Department in writing by December 1 for a full refund. No refunds will be given after this date. You may transfer your registration to another person at any time.

ON-SITE CONFERENCE REGISTRATION HOURS

Monday, December 8 • 8:00 AM - 5:00 PM
Tuesday, December 9 • 8:00 AM - 5:00 PM
Wednesday, December 10 • 8:00 AM - 6:00 PM
Thursday, December 11 • 8:00 AM - 6:00 PM
Friday, December 12 • 8:00 AM - 3:00 PM

SPECIAL NEEDS

If you have a disability that requires special assistance, please call our registration department at 1-800-MECKLER (1-800-632-5537) or 203-226-6967.



PLEASE NOTE

The sponsors and management of Fall Internet World '97 reserve the right to make any necessary changes to this program. Every effort will be made to keep presentations and speakers as represented. However, unforeseen circumstances may result in the substitution of a presentation topic or speaker.

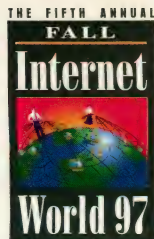
Mecklermedia reserves the right to use photographs of any Fall Internet World attendee for future promotions.

Mecklermedia Corporation assumes no liability for the acts of their suppliers nor for the safety of any Fall Internet World participant while in transit to or from this event. The total liability during the precise hours of the meeting will be limited to a refund of the delegate fee.

For additional printed conference brochures, call 1-800-500-1959 or e-mail fiwprogram@mecklermedia.com.

For conference
and exhibit hall
updates, visit
www.internet.com

register online at www.internet.com



Register for the Conference

On the Web: www.internet.com
By Phone: Call toll free 1-800-632-5537 (Have your completed form ready.)
By Fax: Fax completed form to 203-226-6976
By E-Mail: fiwreg97@mecklermedia.com
By Mail: FIW97, REG/Mecklermedia, 20 Ketchum Street, Westport, CT 06880

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PLEASE NOTE: Conference registration includes admission to exhibit hall. To register for the exhibits only, use the exhibit hall passes on opposite page.

1. YOUR INFORMATION: (PLEASE PRINT)

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First Name _____ Last Name _____

Title _____

Company _____

Street _____

Division _____ Mail Stop _____

City _____

State/Province _____ Zip/Postal Code _____

Country _____

Phone _____ Fax _____

E-mail _____

KEY IWI

2. COMPANY'S PRIMARY BUSINESS:

(CHECK ONLY ONE):

- ☐ A. ISP/Online Svc./Hosting/ Site Development
- ☐ B. Marketing/Advertising
- ☐ C. Media
- ☐ D. Computers/IT - Hardware Manufacturer
- ☐ E. Computers/IT - Software Developer
- ☐ F. Computers/IT - Retailer/Reseller
- ☐ G. Finance/Banking/Insurance
- ☐ H. Government/Defense
- ☐ J. Healthcare
- ☐ K. Education
- ☐ L. Manufacturing
- ☐ M. Retail/Catalog
- ☐ N. Telecommunications
- ☐ P. Entertainment
- ☐ Q. Other (please specify) _____

3. PRIMARY JOB FUNCTION (CHECK ONLY ONE):

- ☐ A. Website Development/Management
- ☐ B. MIS, Network Admin., Other Computer Tech.
- ☐ C. Senior Mgmt. (CEO, President, Owner, VP)
- ☐ D. Finance/Accounting
- ☐ E. Marketing/Sales
- ☐ F. Content (Editor, Artist, etc.)
- ☐ G. Other (please specify) _____

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EARLY BIRD AFTER NOV. 7

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☐ Package 2 P2 \$1,095 \$1,195 _____

All conference sessions and workshops (except hands-on), Wednesday through Friday, plus Platinum Bonus-Pak.

☐ Package 3 P3 \$795 \$895 _____

All conference sessions Wednesday through Friday (no workshops included), plus Platinum Bonus-Pak.

☐ Package 4 P4 \$595 \$695 _____

Any two day sponsored workshop, plus the Platinum Bonus-Pak. Please indicate your choice:

- ☐ Adweek (AD) ☐ Electronic Commerce (EC) ☐ Intranet Forum (IN)
☐ Internet Finance Symposium (IF) ☐ ISP World (IS)
☐ Net Telephony (NT) ☐ Webmasters Symposium (WS)

☐ Package 5 P5 \$395 ea. \$495 ea. _____

One-day conference sessions and/or workshops (except hands-on), plus the Gold Bonus-Pak. Please indicate the day you wish to attend:

- ☐ Monday ☐ Tuesday ☐ Wednesday ☐ Thursday ☐ Friday

☐ Hands-On Workshops \$395 ea. \$495 ea. _____

Admission to the hands-on workshop(s) of your choice, plus the Gold Bonus-Pak. Please indicate which workshop(s) you wish to attend.

- ☐ H01 ☐ H02 ☐ H03 ☐ H04 ☐ H05 ☐ H06 ☐ H07 ☐ H08 ☐ H09 ☐ H010

TOTAL _____

Note: All conference registrations include FREE exhibit hall admission. To register for the exhibits only, use the FREE Exhibit Hall Passes on opposite page.

PAYMENT METHOD

Payment or Government Purchase Order must accompany advance registration and must be received by November 21. Conference fees are non-refundable after December 1, 1997.

☐ Check or Money Order enclosed (Make payable to Mecklermedia Corporation.)

☐ Government Purchase Order enclosed (Must accompany registration form.)

☐ MasterCard

☐ Visa

☐ Diners Club



Card # _____

Expiration _____

Signature _____

4. SIZE OF YOUR ORGANIZATION:

(CHECK ONLY ONE)

- ☐ A. 1-10
- ☐ B. 11-100
- ☐ C. 101-1,000
- ☐ D. 1,001-10,000
- ☐ E. Over 10,000 employees

5. INTERNET PRODUCTS PURCHASING ROLE:

(CHECK ONLY ONE)

- ☐ A. Final decision-maker
- ☐ B. Specify product or vendor
- ☐ C. Recommend product or vendor
- ☐ D. No decision-making responsibility

6. PRODUCT INTEREST: (CHECK ALL THAT APPLY)

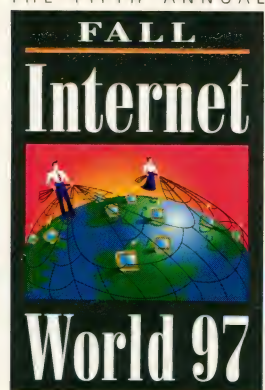
- ☐ A. Access (T1/T3/Cable/ISDN/DSL)
- ☐ B. Web Page Authoring/Design
- ☐ C. Servers
- ☐ D. Operating Systems
- ☐ E. Security Products
- ☐ F. E-Commerce/Transaction Software
- ☐ G. Web Multimedia (Audio/Video/VRML, etc.)
- ☐ H. Network/Intranet Hardware
- ☐ J. Network/Intranet Software
- ☐ K. Website Development/Hosting Services
- ☐ L. Measurement Tools
- ☐ M. Content/Content Developers
- ☐ N. Databases/Personalization
- ☐ P. Internet Telephony
- ☐ Q. Other (please specify) _____

7. LEVEL OF RESPONSIBILITY IN MANAGING

YOUR COMPANY'S WEBSITE: (CHECK ONLY ONE)

- ☐ A. Total
- ☐ B. Substantial
- ☐ C. Partial
- ☐ D. Minimal
- ☐ E. None

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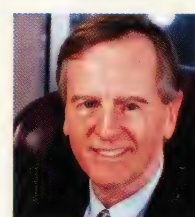
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Extended to November 21!**

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Please refer to code IWI when you register.
Thank you.

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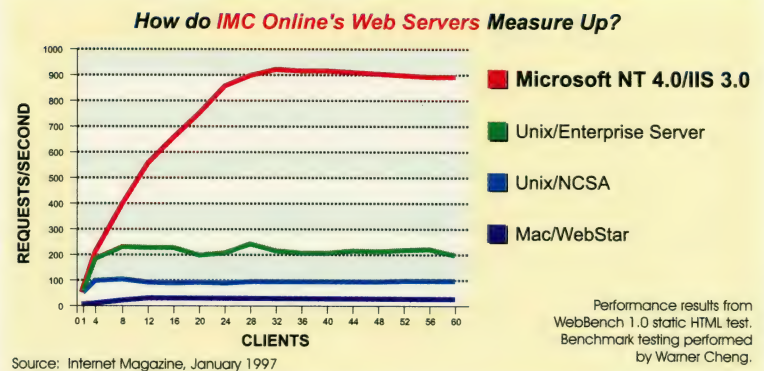
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Standard Plan

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monthly

- What every plan includes plus...
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- 1,000 MB of data transfer per month - over 10,000 page views*
- 5 e-mail POP3 accounts
- unlimited e-mail forwards - name@yourdomain.com will go to newname@ispdomain.com
- One-time setup fee starting at \$20!

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- What every plan includes plus...
- Multiple domains in one account - use a single account to host multiple domain names.
- Pick Standard or Commerce Plan and add 50% per additional domain name in cost of setup and monthly bill.

Reseller Plan #2

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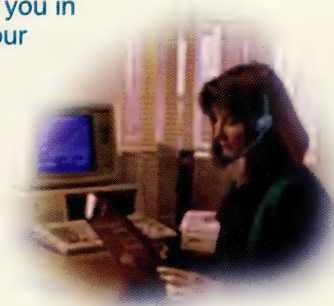
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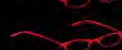
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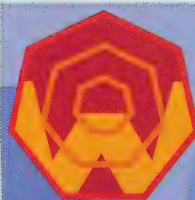
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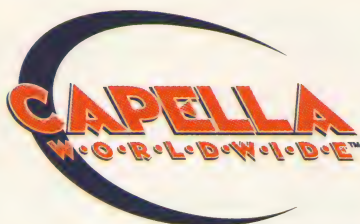
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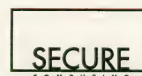
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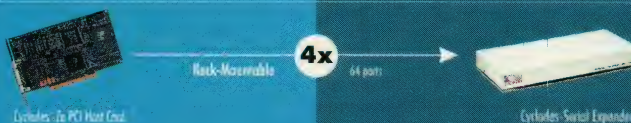
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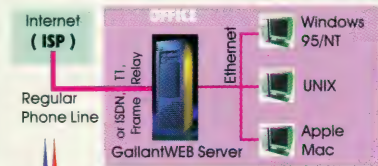
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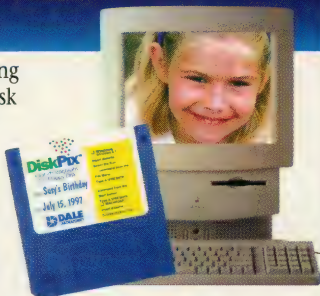
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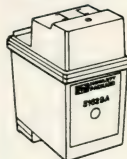
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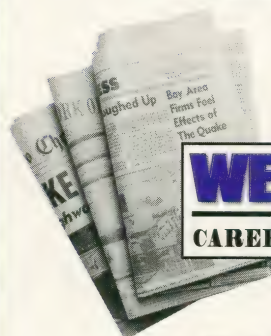


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Special Report: Interactive Business

CDnow, which overcame the initial rejection of music-industry distributors to become a top source for music purchases online, and Warner Brothers, with its unique content (a live Webcast from Kevin Costner's latest film on location) online, are two of the sites profiled.

IW Labs: Search Engines

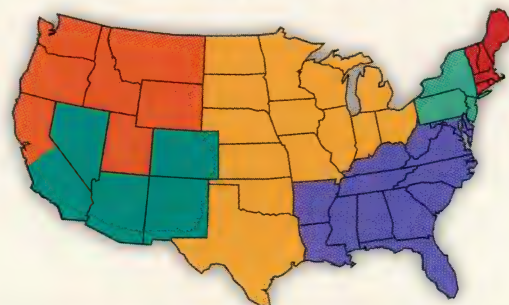
InfoSeek? AltaVista? Lycos? IW Labs examines six search engines so you can find one that will provide you with the most valuable results.

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There's a little organization you may not have heard of called the National Puzzlers' League. It's been around since the late 1800s and has a way of attracting the most fanatical puzzle lovers in the country. If you solve crosswords on any kind of regular basis, then you've probably come into contact with one NPL member or another. (A fair percentage of NPL members create or edit puzzles for a living.)

- You do not want to play Scrabble with these people. • Indeed, the trick to enjoying word games is to find your level: You don't want to be crushed like a bug, be it by a supra-genius Scrabble opponent or by an overly difficult puzzle. Nor, need I add, do you want your every word-game experience to be a breeze. In the first scenario, it's easy to get frustrated and never return. In the second, it is easy to get bored and never return. • Either way would be a shame. There's something about the way words weave together in a crossword grid that's wonderfully elegant and satisfying. I love the challenge of a word puzzle, when you've stared and stared and you just don't get it, and just before you give up, your brain suddenly sees it all in a different light, and you slap your forehead and say Ahhhhh! For some of us, there is no greater sense of achievement. If you feel the same way, these Web sites are for you. If you don't feel the same way, they just might make you see things differently. ■

Eric Berlin is a contributing editor to Internet World.

Puzzability

<http://www.puzzability.com>
Two NPL members with their own puzzle-making business are Mike Shenk and Amy Goldstein, who, along with their partner, Robert Leighton, have started Puzzability, which provides all kinds of word games and puzzles. To advertise their skills, several dandy puzzles are posted on the site: Some change daily, some are semi-permanent. There's a variety of crossword puzzles, all solvable online, such as the excellent "Taking Place" and "The Daily Post," which gives you a tricky little word-play hurdle to leap over every weekday. My fave is "Common Knowledge," a two-part Hangmanlike game where all the answers have something in common. What, for instance, do Orville Redenbacher, Dagwood Bumstead, Pee-Wee Herman, The Cat in the Hat, and Gene Shalit have in common? (How quickly did you figure out that they all wear bow ties?)

Gameshows.Com <http://www.gameshows.com>

This site has two games at present: Out of Order, which has you unscrambling words that fit the given category, and Strike-a-Match, which is far superior. Given six words, can you find the two that have something in common? And can you do it fast? You'll need to if you're going to get the big points. And just when you find a rhythm, Round One ends . . . and now you'll have to find three words with something in common, hidden in a group of nine. In the killer final round, nine words can be divided up into three categories of three words each—but certain words can fit more than one category. Leap before you look and you risk losing mondo points. Go too slow and you might run out of time. Simple as well as addictive, Strike-a-Match is one of the best games on the Net.

PLAY

THE ENIGMA
 January 1993 Portland, Oregon MINISAMPLE

This is a special hypertext introductory edition of *The ENIGMA*. (We also have a [plain-old ASCII version](#).) It's much shorter than the typical twenty-page issue. It is also an invitation to you to participate in a pastime that will provide you with great enjoyment for very little expense.

Welcome to the Live Boggle

Current time: 13:34:57 ET
 Player: EricBerlin
 In the *Rising Sun* house, the minimum word length is 3 letters.
 To play, write your words in the text box below and click on DONE.
 Please PRESS RETURN after each word and do not use commas!

You have 10 seconds to click on DONE when "Time Over" appears.

The clock only works with some browsers as Netscape 2.0. You may use a watch. You have 5 minutes.

3:40

Done

M	E	C	E	G
C	E	T	I	H
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D	T	I	E	N

your words

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 tile
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 rite
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Internet Park <http://www.amo.qc.ca/parc/indexPark.html>

Internet Park has the best online version of Boggle, a classic game where you form as many words as possible from a grid of 16 letters. Plus, the Park has a bizarre variation on the game using the same 16-letter grid except this time you have a full two weeks to find all the words. (Normally you get five minutes.) They call this "Diehard Boggle," fittingly enough, although "Lunatic Boggle" also comes to mind. ReadyMix, however, is the most attractive and most popular of the Park games. Basically, it's Scrabble, except everybody has the same tiles and moves simultaneously—whoever finds the best scoring opportunities surges into the lead. If you've ever spent a dozen turns in a row with a rack full of vowels, at least now you can rest assured that your competitors are in no better shape. Internet Park is free for 20 days; after that it's \$39 per year.

NPL <http://www.puzzlers.org>

If you are a fanatic about words and puzzles, check out the National Puzzlers' League. You'll find a sample of the *Enigma*, the monthly newsletter that's packed with the most devilish word puzzles you've ever seen. The puzzles all tend to work the same way: A little verse is given with a number of words removed—these words have some wordplay relationship. Maybe it's as simple as one word becoming the other when its first letter is removed, or perhaps one word is the other spelled backwards, or maybe some wilder form of wordplay is used, be it a spoonergram or a heteronym or a repeated trigram deletion. This is heavy-duty puzzle-love, and isn't for everybody, but if you've read this far, you should go take a look. Particularly if you beat everyone else at Scrabble.

Across Lite - C:\Program Files\Litsoft\Across Lite\Puzzles\Sep0796

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Open Save Print Pen

Check Reveal Scramble Unscramble

NY Times, Sat, Sept 07

37. Ballroom couples

The New York Times ON THE WEB

W. Shortz (c) 1996, The New York Times

ACROSS

26. Angle's partner
 27. Unification Church member
 29. Claim
 32. Christie adaptation
 38. Impetuous
 39. Eat exclusively
 40. Ebenezer's partner
 45. They do bananas over banan

DOWN

32. Title for Gilbert and Sullivan
 33. Lay eggs, as a field cricket
 34. Young hares
 35. Provokes
 36. Race car driver Fabi
 37. Ballroom couples
 40. Carrier to Kyoto
 41. Flower whose name means

Select c 05:01

The New York Times Crossword <http://www.nytimes.com/partners/xword>
Weekend Edition Sunday Puzzle <http://www.npr.org/programs/wesun>

Another NPL member is Will Shortz, the editor of the *New York Times* crossword. Shortz has made the puzzle more fun and less of a straight vocabulary test. All these puzzles can be retrieved straight off the New York Times Web site, along with the software you need to solve them. There's a \$9.95 per year fee (waived for subscribers). In addition to his *Sunday Times* challenge, Shortz is also on National Public Radio, stumping the rest of the country with nutty linguistic gymnastics. (Can you add two pairs of double letters to "SINALE" and break up the result into a four word familiar phrase? I sure couldn't.) If you miss Shortz on the radio, you can get the weekly challenge at the NPR Web site at no charge. The answer arrives the following week. (The answer to the above: "A as in Apple.")

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The Surfboard

by Eric Berlin

THERE ARE 40 MILLION
STORIES ON THE NAKED
INTERNET. HERE ARE
SOME OF THEM.



Mad scientists take note: Norn evolution is advancing at breakneck speed online.

Creating a New Norn

Back in September, The Surfboard featured the Tamagotchi graveyard, where brave pets go to die.

Now the Internet has become an electronic-pet breeding ground thanks to Creatures, a new computer game from Mindscape.

Whereas Tamagotchis are as intelligent as rocks, Norns—the creatures from Creatures—are smart as whips. You can teach them how to speak, how to behave—and here's where Tamagotchis really fall

short—you can breed Norns. Thousands of Creatures addicts are at this moment cross-breeding their Norns, and new never-before-seen Norns are being born. And Creatures players with Net access are trading their Norns with other players and sounding quite a bit like mad scientists as they do so.

One of the best cross-breeding “facilities” is the Norrotek Genetics Corp., (<http://www.geocities.com/TimesSquare/Castle/4522/norrotek.html>). There's also the Creatures Exchange

(<http://mudhole.ehche.ac.uk/~addicted/creatures.html>) and, yes, Norns'R'Us (<http://www.lynet.de/~hsiegel>).

If all this sounds like another online recreation that people are taking way too seriously, you're right. Final piece of evidence: The Norn Genome Project (<http://members.aol.com/llucifuge>). Here's where a team of Creatures geneticists are doing nothing less than “creating the perfect Norn” by mapping out the Norn genome. Let's see someone try that with a Tamagotchi.

The Search Spies

The answer to the question that has haunted Internet watchers is finally within reach: What do people use the Internet for? See for yourself at any of the search-engine spies: Pages that display keywords being entered at Magellan, MetaCrawler, and WebCrawler.

While you can see the searches being performed right now, the people behind those searches remain, thankfully, anonymous. But it's hard not to wonder: Who on this planet is searching for “folding bananas”? What problem requires the “identification of spiders”? On and on it goes. Watching any of the search-engine spies means discovering how vast this world is, how varied are the people who inhabit it and how few of them can spell. Spy for yourself at: <http://voyeur.mckinley.com/cgi-bin/voyeur.cgi>, <http://search2.metacrawler.com/perl/metaspyspy>, and <http://webcrawler.com/WebCrawler/Fun/SearchTicker.html>.



What do other people look for? The search spies show it in real time.

Top Comic Delivery

When everyone's sitting around telling light bulb jokes, do you fade into the background? Well, you'll never be a wallflower again if you sign up for any of the 108 humor mailing lists compiled at <http://www.angelfire.com/pa/humorlists>. From



No minimum required at Rec.Humor.Funny's site.

visit the Rec.Humor.Funny Web site at <http://www.clari.net/rhf>. Recently redesigned in celebration of the newsgroup's 10-year anniversary, the site features the 2,000 best jokes of the past decade. A search engine can help you delve into the full archive of over 6,000 jokes.

the Bartender Joke of the Day to the Sarcasm Mailing List (like I'm sure *that's* worth reading), you can choke your mailbox with jokes if you wish.

To see only the crème de la crème,

INTRODUCING A WHOLE NEW CATEGORY OF HIGH-PERFORMANCE NOTEBOOKS. (THE UNDER \$4,000 CATEGORY.)



NEW DELL® INSPIRON™ 3000 M233XT 233MHz PENTIUM® PROCESSOR WITH MMX™ TECHNOLOGY

- ★ **13.3" XGA Active Matrix TFT Display**
- ★ **32MB SDRAM (144MB Max)**
 - 512KB L2 Pipeline Burst Cache
- ★ **2.1GB ATA Hard Drive**
 - Modular Options Bay accepts 20X Max™ Variable CD-ROM, 3.5" Floppy Drive (both included) or Optional 2nd Lithium Ion Battery
 - 128-bit Graphics Accelerator with 64K Colors at 1024x768
 - Zoom Video and USB Ports
- ★ **Stereo Speakers with 3D Surround Sound and Yamaha SW Wavetable**
 - Smart Lithium Ion Battery
 - Cardbus Ready/Fast IR 1.1
- ★ **Microsoft® Office 97 Small Business Edition**
 - Microsoft® Windows® 95
 - Microsoft Internet Explorer
- ★ **6.9 Pounds*/Touchpad**
 - Extendable 1 Year Warranty
- ★ **Upgrade to 64MB SDRAM, add \$399.**
- ★ **Upgrade to a 4GB Ultra-ATA Hard Drive, add \$349.**

\$3999

Business Lease: \$141/Mo., 36 Mos.
Order Code #800186

INTRODUCING THE DELL INSPIRON 3000 M233XT - 13.3" XGA SCREEN, 233MHz, SDRAM. FINALLY, HIGH-END FEATURES WITHOUT THE HIGH-END PRICE.

Okay. We admit it. We think our new line of Inspiron™ notebooks is pretty impressive. And it offers a feature set for under \$4,000 that's even more exceptional. It comes loaded with a 233MHz Pentium® processor with MMX™ technology, the fastest mobile Pentium processor you can find in any notebook. A 13.3" XGA TFT screen, adding up to a 21% larger viewing area than a 12.1" screen and, thanks to XGA resolution, fitting



63% more information on the screen. 3D Surround Sound and high-performance video. Pretty amazing considering that even loaded with all these features, the new Dell® Inspiron 3000 M233XT weighs in at just 6.9 pounds. So you see a whole new category of notebooks has arrived. Dell Inspiron. The notebook for people who are looking for more. If you're looking for more, give us a call or visit us on our website.

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DELL DIMENSION DESKTOPS FOR BUSINESS

Common features: ♦ Mini-Tower Model ♦ 512KB L2 Cache ♦ 24X Max¹ Variable CD-ROM Drive ♦ Microsoft® Office 97 Small Business Edition plus Bookshelf 96 ♦ MS Internet Explorer ♦ Microsoft Mouse (MS IntelliMouse on XPS Systems) ♦ 2 Universal Serial Bus (USB) Ports ♦ 3 Year Limited Warranty¹ with 1 Year On-site² Service ♦ **Upgrades:** ♦ 3Com® 3C905 Fast EtherLink® XL 10/100 PCI Card, add \$99. ♦ 4/8GB EIDE TR4 TBU, add \$199. ♦ APC Back-UPS Pro 650, add \$299. ♦ 3 years On-site³ Service

NEW DELL DIMENSION® XPS D300 300MHz PENTIUM® II PROCESSOR FEATURING MMX™ TECHNOLOGY	NEW DELL DIMENSION XPS D266 266MHz PENTIUM II PROCESSOR FEATURING MMX TECHNOLOGY	NEW DELL DIMENSION XPS D233 233MHz PENTIUM II PROCESSOR FEATURING MMX TECHNOLOGY	DELL DIMENSION XPS M233s 233MHz PENTIUM® PROCESSOR WITH MMX TECHNOLOGY
Common features listed above plus: <ul style="list-style-type: none"> • 64MB SDRAM Memory • NEW 8.4GB Ultra ATA Hard Drive with 512KB Cache (9.5ms) • NEW 1200HS Monitor (17.9" v.i.s., .26dp) • NEW Matrox Millennium II 8MB WRAM AGP Video Card⁴ • NEW Creative Labs AWE64 Value Sound Card • Altec Lansing ACS-90 Speakers • Iomega® Zip 100MB Internal Drive with One Cartridge 	Common features listed above plus: <ul style="list-style-type: none"> • 64MB SDRAM Memory • NEW 6.4GB Ultra ATA Hard Drive • NEW 1000TX Trinitron® Monitor (15.9" v.i.s., .26dp, 1280x1024 max. res.) • NEW STB Velocity 4MB AGP Video Card • NEW Creative Labs AWE64 Value Sound Card • Altec Lansing ACS-90 Speakers • Iomega Zip 100MB Internal Drive • 3Com 3C905 Fast EtherLink XL 10/100 PCI Card 	Common features listed above plus: <ul style="list-style-type: none"> • 32MB SDRAM Memory • NEW 8.4GB Ultra ATA Hard Drive with 512KB Cache (9.5ms) • NEW 1000TX Trinitron Monitor (15.9" v.i.s., .26dp, 1280x1024 max. res.) • NEW STB Velocity 4MB AGP Video Card • NEW Creative Labs AWE64 Value Sound Card • Altec Lansing ACS-90 Speakers ★ Upgrade to a 1200HS Monitor (17.9" v.i.s., .26dp), add \$189. 	Common features listed above plus: <ul style="list-style-type: none"> • 32MB SDRAM Memory • 6.4GB Hard Drive with 512KB Cache (9.5ms) • 1000LS Monitor (15.9" v.i.s.) • Matrox Millennium II 4MB WRAM PCI Video Card • Sound Blaster 16 WaveSynth Wavetable Sound • Altec Lansing ACS-90 Speakers ★ Upgrade to an 8.4GB Hard Drive with 512KB Cache, add \$89.
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OUR NEW 300MHz SYSTEMS AND PRICES

DELL DIMENSION DESKTOPS FOR HOME

Common features: ♦ Mini-Tower Model ♦ 512KB L2 Cache ♦ 24X Max¹ Variable CD-ROM Drive ♦ NEW 56K Capable** U.S. Robotics x2 WinModem ♦ Windows 95 ♦ MS Internet Explorer ♦ MS Home Essentials plus Best of Entertainment Pack ♦ MS IntelliMouse ♦ 3 Year Limited Warranty¹ with 1 Year On-site² Service ♦ **Upgrades:** ♦ Iomega Zip 100MB Internal Drive w/One Cartridge, add \$99. ♦ HP DeskJet 820Cse Color Printer, add \$299.

NEW DELL DIMENSION XPS D300 300MHz PENTIUM II PROCESSOR FEATURING MMX TECHNOLOGY	NEW DELL DIMENSION XPS D266 266MHz PENTIUM II PROCESSOR FEATURING MMX TECHNOLOGY	NEW DELL DIMENSION XPS D233 233MHz PENTIUM II PROCESSOR FEATURING MMX TECHNOLOGY	DELL DIMENSION XPS M200s 200MHz PENTIUM PROCESSOR WITH MMX TECHNOLOGY
Common features listed above plus: <ul style="list-style-type: none"> • 64MB SDRAM Memory • NEW 8.4GB Ultra ATA Hard Drive with 512KB Cache (9.5ms) • NEW 1200HS Monitor (17.9" v.i.s., .26dp) • NEW Matrox Millennium II 8MB WRAM AGP Video Card⁴ • Integrated Yamaha Wavetable Sound • Altec Lansing ACS-490 Full Dolby Surround Sound Speakers with Subwoofer • Iomega Zip 100MB Internal Drive with One Cartridge 	Common features listed above plus: <ul style="list-style-type: none"> • 64MB SDRAM Memory • NEW 8.4GB Ultra ATA Hard Drive with 512KB Cache (9.5ms) • NEW 1000TX Trinitron monitor (15.9" v.i.s., .26dp, 1280x1024 max. res.) • NEW STB Velocity 4MB AGP Video Card • NEW Creative Labs AWE64 Value Sound Card • Altec Lansing ACS-490 Full Dolby Surround Sound Speakers with Subwoofer 	Common features listed above plus: <ul style="list-style-type: none"> • 32MB SDRAM Memory • NEW 6.4GB Ultra ATA Hard Drive with 512KB Cache (9.5ms) • 1000LS Monitor (15.9" v.i.s.) • NEW STB Velocity 4MB AGP Video Card • Integrated Yamaha Wavetable Sound • Altec Lansing ACS-290 Speakers with Subwoofer ★ Upgrade to 64MB SDRAM, add \$179. ★ Upgrade to a Creative Labs AWE64 Value Sound Card, add \$39. 	Common features listed above plus: <ul style="list-style-type: none"> • 32MB SDRAM Memory • 4.3GB Hard Drive (9.5ms) • 800HS Trinitron Monitor (13.7" v.i.s., .26dp) • Matrox Millennium II 4MB WRAM PCI Video Card • Sound Blaster 16 WaveSynth Wavetable Sound • Altec Lansing ACS-290 Speakers with Subwoofer ★ Upgrade to a 1000LS Monitor (15.9" v.i.s.), add \$99. ★ Upgrade to a Matrox Millennium 8MB WRAM PCI Video Card, add \$79.
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⁵Amount of monthly lease payment, based upon 24-month lease from Dell Financial Services L.P., an independent entity; first and last monthly lease payments due prior to delivery: ⁶\$321; ⁷\$267; ⁸\$223; ⁹\$178 Above monthly lease payments exclude tax which may vary; (for example, Hartford City, IN sales tax: ¹⁰\$8.02); shipping cost and \$55 doc. fee due with second payment; no security deposit required, subject to credit approval and availability. Lease terms subject to change.



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vice, add \$99.

DELL DIMENSION M200a 300MHz PENTIUM PROCESSOR WITH MMX TECHNOLOGY

Common features listed above plus:

- 16MB SDRAM Memory
- 3.2GB Hard Drive (12ms)
- NEW 800LS Monitor (13.7" v.i.s.)
- 2MB EDO VRGE 3D Video
- Iomega Zip 100MB Internal Drive with One Cartridge
- 3Com EtherLink III 10Mbit ISA Combo Card
- ★ Upgrade to 32MB SDRAM, add \$89.
- ★ Upgrade to a 4.3GB Hard Drive, add \$39.
- ★ 3-Pak of Iomega Zip Cartridges, add \$39.

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- Automap Streets Plus
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- Works 4.0
- Encarta 97
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Microsoft Internet Explorer

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Common features: ♦ 512KB Integrated L2 ECC Cache ♦ Integrated PCI Ultra-Wide SCSI-3 Controller ♦ Intel® Pro/100B PCI Ethernet Adapter ♦ Intel LANDesk® Server Manager v2.5x ♦ 3 Years Next Business Day On-site* Service

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Common features listed above plus:

- 128MB ECC EDO Memory (512MB Max)
- 4GB Ultra-Wide SCSI-3 Hard Drive (27GB Max)
- APC Smart-UPS 700w Power Supply
- 24X Max® Variable CD-ROM Drive
- 3Com Office Connect Hub 8-Port/TPC
- 6 Drive Bays: 3 Hard Drive, 3 Removable Media
- 6 Expansion Slots: 3 PCI, 3 EISA
- ★ MS Windows NT® Server 4.0 (10 Client Access Licenses), add \$799.

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Common features listed above plus:

- 64MB ECC EDO Memory (512MB Max)
- 2GB Ultra-Wide SCSI-3 Hard Drive (27GB Max)
- 24X Max® Variable CD-ROM Drive
- 6 Drive Bays: 3 Hard Drive, 3 Removable Media
- 6 Expansion Slots: 3 PCI, 3 EISA
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DELL NOTEBOOKS—INTRODUCING DELL® INSPIRON™ 3000

Common features: ♦ Modular Options Bay accepts 20X Max® Variable CD-ROM, 3.5" Floppy Drive (both included), or Optional 2nd Li-Ion Battery
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♦ Extendable 1 Year Warranty†

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- Common features listed above plus:
- 13.3" XGA Active Matrix TFT Display
 - 32MB SDRAM (144MB Max)
 - 512KB L2 Pipeline Burst Cache
 - 128-bit Graphics Accelerator with 64K Colors at 1024x768
 - 2.1GB ATA Hard Drive
 - Zoom Video and USB Ports
 - Stereo Speakers with 3D Surround Sound and Yamaha SW Wavetable
 - Cardbus ready/Fast IR1.1
 - 6.9 Pounds*
 - ★ Upgrade to 64MB SDRAM, add \$399.

\$3999[†]

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NEW DELL INSPIRON 3000 M200ST 200MHz PENTIUM PROCESSOR w/MMX

- Common features listed above plus:
- 12.1" SVGA Active Matrix TFT Display
 - 32MB SDRAM (144MB Max)
 - 512KB L2 Pipeline Burst Cache
 - 128-bit Graphics Accelerator with 16 Million Colors at 800x600
 - 2.1GB ATA Hard Drive
 - Zoom Video and USB Ports
 - Stereo Speakers with 3D Surround Sound and Yamaha SW Wavetable
 - Cardbus ready/Fast IR1.1
 - 6.4 Pounds*

\$3399[†]

Business Lease: \$123/Mo., 36 Mos.
Order Code #800187

NEW DELL INSPIRON 3000 M166ST 166MHz PENTIUM PROCESSOR w/MMX

- Common features listed above plus:
- 12.1" SVGA Active Matrix TFT Display
 - 16MB SDRAM (144MB Max)
 - 256KB L2 Pipeline Burst Cache
 - 128-bit Graphics Accelerator with 16 Million Colors at 800x600
 - 2.1GB ATA Hard Drive
 - Zoom Video and USB Ports
 - Stereo Speakers with 3D Surround Sound and Yamaha SW Wavetable
 - Cardbus ready/Fast IR1.1
 - 6.4 Pounds*
 - ★ Upgrade to 32MB SDRAM, add \$199.

\$2999[†]

Business Lease: \$108/Mo., 36 Mos.
Order Code #800183

DELL LATITUDE LM M133ST 133MHz PENTIUM PROCESSOR w/MMX

- Common features listed above plus:
- 12.1" SVGA Active Matrix TFT Display
 - 16MB EDO RAM (72MB Max)
 - 256KB L2 Pipeline Burst Cache
 - 128-bit Graphics Accelerator with 64K Colors at 800x600
 - 1.6GB Hard Drive
 - Integrated 16-bit Stereo Sound
 - IrDA 1.0 Std. Compliant
 - Under 7 Pounds*
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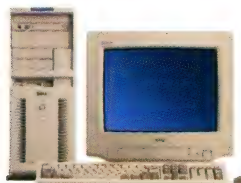
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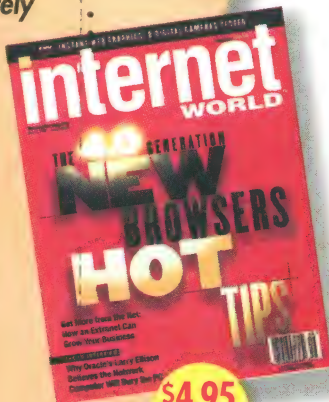
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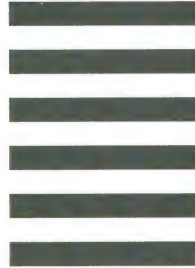
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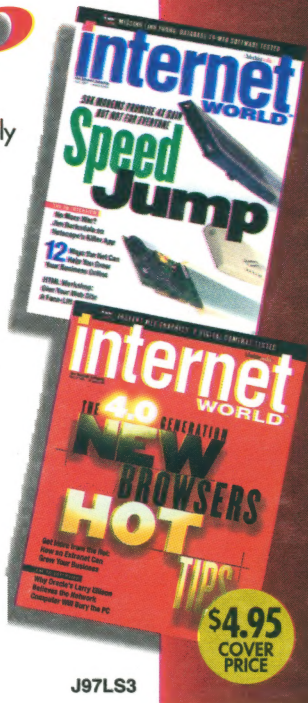
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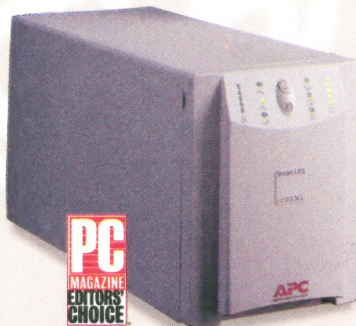
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